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ABSTRACT

This guide to integrating academic and vocational education is the result of extensive research and experimentation at four pilot sites throughout Texas. The introductory section outlines the project philosophy and activities and describes the pilot sites. Examined in a background section are the origin and nature of integration, important relevant educational legislation and reports, the changing workplace and the current U.S. education system, educational reform and restructuring, and business and industry complaints about workers. The role of curriculum integration in solving existing problems is analyzed. Provided next are general procedures and a step-by-step plan for integration. The 3-year integration plans of the four pilot sites are presented. Included in a resource section are the following: extensive annotated lists (amounting to over 225 pages) of integration resources for academic and vocational teachers, career development/guidance counselors, persons responsible for obtaining funding, individuals concerned with general integration topics, and staff developers. The teacher resources are organized by the following subject areas: language arts, math, science, social studies, agriculture, auto mechanics, building trades, electronics, health occupations, home economics, industry and technology, and microcomputer applications. One hundred forty-four transparency masters are included. (MN)

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Blueprint for Integration of Academic and Vocational Education

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Blueprint for Integration of Academic and Vocational Education

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Project Coordinator

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Preface

Our kids are not finishing the race and more of the same is not the solution to the problem.

Educators, at all levels, are developing a keen awareness of the necessity to provide all students with the real world skills required to function in a world class work force and, therefore, make the United States more competitive in the world economy. The integration of instruction provides that vital link between education and the real world. The Carl D. Perkins Vocational and Applied Technology Education Act of 1990 and its subsequent amendments in 1992 serve as the catalyst to improve and enhance the integration of all educational experience.

The need for integrated instruction is not new; it has been recognized since the very beginning of vocational education. However, over the years the integration of instruction has occurred generally on an "as needed" basis and then usually in isolated environments of vocational education courses only. Integration of instruction must cross all content areas and programs if schools are to help students finish the race.

Blueprint for Integration is the result of extensive research and experimentation, using four pilot sites. The *Blueprint* does not, nor should it, prescribe one single, structional process to achieve full integration. However, it does provide the basic ingredients and process to establish a truly integrated educational system. As with any restructuring effort, the integration of academic and vocational instruction will be successful only if there is a commitment from all levels of district and/or school personnel, from the school board to the support staff.

The commitment should include such fundamental beliefs as (1) all students can learn; (2) all students learn in different ways and at different rates; (3) integration must be a total school effort; (4) it takes time to build trust and understanding between academic and vocational education teachers; (5) attitudinal changes come only through extensive and intensive staff development; and (6) relevant content and applied learning activities are necessary for all students.

The researchers, project administrators, trainers, and, most importantly, the pilot schools are to be commended for their commitment to producing a user-friendly guide and for their deep-seated belief that improving the quality of education can be a reality.

Robert S. Patterson, Senior Director
Vocational Education Programs

Sylvia Clark, Director
Vocational Guidance Programs

Philosophy

WE BELIEVE :

- our current educational system, which was developed in the early 1900's in response to the Industrial Revolution and patterned after assembly line production methods, no longer meets the needs of a technological/information society competing in a global marketplace.
- a properly functioning educational system for the 21st century should parallel the "real world" and should implement the site-based decision-making, strategic planning, and total quality managment processes used in business and industry.
- previous efforts have merely tried to REFORM our educational system; attempting to repair the cracks and holes by focusing on "quick fixes."
- this proposed change in education will be successful because it attempts to RESTRUCTURE the educational system, including its method of delivery, from the ground up.
- significant change is not a quick process but an evolutionary one.
- the foundation of every educational structure is its teachers, and the structural reinforcment of this foundation calls for providing teachers with new methods, techniques, and ideas for teaching.
- staff development is the best medium for reinforcing this foundation of capable, informed teachers, and without staff development, restructuring is doomed.
- the restructuring of education can only be accomplished by means of a concentrated and unified TEAM effort of parents, vocational teachers, academic teachers, administrators, school board members, and representatives from business and industry.
- no two school districts are alike; each district has unique qualities, attributes, and characteristics, and therefore no ONE restructuring plan or method will work for all schools. A successful restructuring plan for a school district will be established BY the members of the district, FOR the members of the district.
- the integration of academic and vocational education will provide more authentic instruction to ALL students so that they can SUCCESSFULLY compete in and meet the needs of a global society in the 21st century.

Overview of the Project

The primary goal of integrating academic and vocational education is to make applied vocational education more accessible to academic students and advanced courses more accessible to students concentrating in vocational education. Through integrated academic and vocational education, we believe all learning will become more relevant to both groups of students and all students will learn and practice "employability skills" and higher level thinking skills.

In response to the realization of the need for educational restructuring in Texas to prepare students for success in both college and the work world, this project began as a grant to the Educational Development and Training Center (EDTC) through the Texas Education Agency and Carl Perkins funding. The purpose of the grant was to develop replicable models integrating academic and vocational education.

Specific strategies were to be developed for the application of integration across the curriculum. In addition, sample lesson plans and activities for integrating and enhancing applied technology components for students in math and science were to be developed and field tested. All of this research and product were to be offered in a handbook for other schools interested in the integration of academic and vocational education.

The framework for this approach to restructuring was based on the principles of site-based management; those closest to a situation have a clearer understanding of daily operations, changes needed, and obstacles that may prevent a goal or objective from being achieved. We do not believe that effective changes can occur as a result of the simple adoption of off-the-shelf materials. We believe effective changes will be the result of research and applications and adaptations to fit each school and community. Effective changes require a concerted effort at all levels—student, teacher, administrative, school board, and state agency. Effective changes do not result from overnight processes, but require substantial periods of time.

Pilot sites

Four districts were selected as pilot sites for the project. They were:

1. Bowie High School, Austin Independent School District, Austin, Texas
2. Greenville High School, Greenville Independent School District, Greenville, Texas
3. Mansfield High School, Mansfield Independent School District, Mansfield, Texas
4. Socorro High School, Socorro Independent School District, El Paso, Texas

These districts were carefully chosen to represent the diversity in school size, location, and demographics that make up Texas public schools. They all shared a common vision and commitment to create a climate in which students could engage in experiential and applied learning.

Each pilot site was given an opportunity to develop a model for integration based on input provided by a focus group comprised of key teachers, administrators, parents, school board members, counselors, and students at that site.

Because we believe staff development, preferably called staff renewal, is the key to change, the Educational Development & Training Center's model established guidelines for up to 28 days of staff development. Approximately three of the 28 days were set aside for "shadowing." Vocational and academic teachers observed in one another's classsrooms to actually "see" how and what the other teaches, and both went into business and industry as observers. The other days of staff development are devoted to topics designated in a prescriptive package developed by the focus groups. The choice of topics is unique to each school. We have added a list of topics for staff development that we think would be helpful to participants in developing their own prescriptive packages.

Each site selected subject areas to integrate and began staff development activities and the development of teaching activities, lesson plans, and evaluation procedures.

Included in the plan was a meeting in Austin for all participants from the four sites. While there, they participated in staff development activities with business and industry leaders. They also attended a materials fair where equipment, books, and curricula for use with integration activities were displayed.

In the spring, representatives from all sites were allowed to make out-of-state visits to obtain first-hand knowledge of integration activities already in place.

After nine months of training and preparation, each project site completed a model of the integration plan for their school. All four models and all the guidelines are included in this handbook.

At the completion of the 1991-92 school year, a cadre of trainers, composed of teachers, counselors, and administrators from each site, participated in a three-day training session with EDTC on the campus of East Texas State University in Commerce. This cadre was trained to carry out staff development training for new participants in the 1992-93 Integration Project.

Replication

Plans are being made to implement these integration plans at all four of the sites and begin the same planning strategies at nine sites in Texas during the 1992-93 school year.

Origin of Integration

The term *integration,* in conjunction with vocational and academic education, was used in the wording of the Carl D. Perkins Vocational and Applied Technology Act of 1990. This Act provides funding to schools which implement integrated activities and programs.

> *"Funds made available—shall be used to provide vocational education in programs that. . . integrate academic and vocational education. . . through coherent sequences of courses so that students achieve both academic and occupational competencies."*

Integration and the idea of restructuring the curriculum in schools by using "hands-on activities" to teach for "relevant, real world outcomes" are discussed in the The Secretary's Commission on Achieving Necessary Skills (SCANS) Report. The SCANS Report concluded that basic skill competencies "should be taught and understood in an *integrated* fashion that reflects the workplace contexts in which they are applied."

Other widely acclaimed reports such as President Bush's educational plan in *America 2000*; the Carnegie Forum's report, *A Nation Prepared;* and William T Grant's book, *The Forgotten Half;* reflect recognition of the idea of integrating academic and vocational education at high levels.

In the February 1991 issue of the *Phi Delta Kappan,* John Wirt said that the Carl D. Perkins Vocational and Applied Technology Act of 1990 has given vocational education both a *challenge* and an *opportunity.* "The *challenge* is to reconstruct vocational education so that it begins to contribute more than it now does to the development of students' thinking. The *opportunity* is to restructure the high school so that it is more responsive to the needs of the American workplace, a workplace facing increasing global economic competition."

A number of nationwide models and approaches to integrating academic and vocational education are emerging.

The Texas Commissioner of Education, Dr. Lionel "Skip" Meno, and other Texas Education Agency personnel have recognized the importance of integrating vocational and academic education in the restructuring of Texas schools.

Perkins Act monies may be viewed as seed money that can provide impetus for innovation, but local support will be needed to sustain changes. Of course we know that money alone is not the key to successful schools. The key is careful evaluation, planning, and implementation in each individual school.

Robert S. Patterson, former Director of Vocational Education at The Texas Education Agency, summed up the situation well at a meeting on Integration in Austin in 1991 when he said, "The Carl Perkins Act and money is a vehicle, not a reason, to integrate general and vocational education. The reason is to better serve or develop total students."

Important Education Legislation Studies and Reports in the United States

Many committees and commissions have been formed to study current problems in education and decide how schools can be restructured to enable students to fill the needs of the job market of the future. Several of these reports have had a major impact on education systems in the United States.

America's Choice: high skills or low wages! The Report of The Commission on the Skills of the American Workforce

This significant report, published in 1990 by the National Center on Education and the Economy, notes a direct correlation between the decline in American industry and the decline in American schools over the last 40 years. The committee suggests the solution requires drastic structural changes in both business and education. To be effective, schools must change current methods of preparing students to enter the United States work force.

According to the report, by the year 2000 more than 70 percent of the jobs in America will not require a college education. These jobs are the basis of the American economy, and the "productivity of workers in these jobs will make or break our economic future." Tragically, the report continues, "America may have the worst school-to-work transition system of any advanced industrial country. Students who know few adults to help them get their first job are left to sink or swim."

This situation is forcing Americans to make a choice. The choice America faces is a choice between high skills and low wages. Gradually, silently, we are choosing low wages.

> "It is a choice which undermines the American dream of economic opportunity for all. It is a choice that will lead to an America where 30 percent of our people may do well—at least for awhile—but the other 70 percent will see their dreams slip away.
>
> We still have time to make the other choice—one that will lead us to a more prosperous future. If we make this choice, we must change our approach to work and education."

The committee suggests that schools must increase student motivation and achievement, decrease student dropout rates, and prepare high school graduates to operate in the workplace at a professional level.

America 2000

President Bush's *America 2000* stated five national education goals:

- all children start school ready to learn;
- a 90% high school graduation rate;
- competency in English, math, science, history, and geography;
- every adult American will be literate;
- every school in the country will be free of drugs and violence.

Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990

These excerpts are from the Carl D. Perkins Vocational and Applied Technology Education Act Amendments (Act). Following each are paraphrases marked by italicized bold-faced type.

Section 2 (Statement of Purpose): It is the purpose of this Act to make the United States more competitive in the world economy by developing more fully the academic and occupational skills of all segments of the population. This purpose will principally be achieved through concentrating resources on improving educational programs leading to academic and occupational skills competencies needed to work in a technologically advanced society. (Section 2)

> ***The purpose of the Act is to provide a technically skilled work force to help the United States become more competitive in a global economy system. This goal can be achieved through integrating academic and vocational education.***

Section 113 (State Plan) (a)(3)(B): In general any state desiring to receive funds from its allotment for any fiscal year shall submit to the Secretary a State plan for a 3-year period, in the case of the initial plan, and a 2-year period thereafter, together with such annual revisions as the State board determines to be necessary . . . . In developing the State plan, the State shall conduct an assessment . . . . Such assessment shall include analysis of. . . the capability of vocational education programs to provide vocational education students, to the extent practicable, with (i) strong experience in and understanding of all aspects of the industry the students are preparing to enter (including planning, management, finances, technical and production skills, underlying principles of technology, labor and community issues, and health, safety, and environmental issues); and (ii) strong development and use of problem-solving skills and basic and advanced academic skills (including skills in the areas of mathematics, reading, writing, science, and social studies) in a technological setting.

> *To receive funding, states must submit three-year plans based on assessment of the capability of their vocational education programs to provide students with:*
>
> - *experience in all aspects of the industry they are preparing to enter.*
> - *understanding of those aspects*
> - *problem-solving skills*
> - *applied academic skills*

Section 115 (State and Local Standards and Measures) (b)(1): Each system developed . . . shall include measures of learning and competency gains, including student progress in the achievement of basic and more advanced academic skills.

> *State and local districts must determine the performance standards with which to measure students' competency gains in basic and advanced academic skills.*

Section 115 (State and Local Standards and Measures) (c)(1): In developing the standards and measures included in a system developed . . . . the State board shall take into consideration standards and measures developed under job opportunities and basic skills training programs established and operated under a plan approved by the Secretary of Health and Human Services . . . .

> *The performance standards above should coordinate with standards and measures developed under job opportunities and basic skills training programs through the Department of Health and Human Services.*

Title II, Subpart 3, Section 240 (Local Application) (11): Any eligible recipient desiring financial assistance under this part shall, according to requirements established by the State board, submit to the State board an application, covering the same period as the State plan, for the use of such assistance. The State board shall determine requirements for local applications, except that each such application shall provide a description of how the eligible recipient will provide a vocational education program that (A) integrates academic and occupational disciplines so that students participating in the program are able to achieve both academic and occupational competence; and (B) offers coherent sequences of courses leading to a job skill.

> ***States requesting funds from Title II must submit an application for the same period as the state plan (three years). This application will include a statement describing how the vocational education programs will integrate academic and vocational disciplines in logical sequences of courses that will provide students with job skills.***

Title IV, Part A, Section 402 (National Assessment of Vocation Education Programs) (a)(6): In order to carry out the objectives set forth in section 401, the Secretary shall conduct applied research on aspects of vocational education specifically related to this Act. Such research may be conducted through the Office of Education Research and Improvement. Such research shall include successful methods of reinforcing and enhancing basic and more advanced academic and problem-solving skills in vocational settings.

> ***The Secretary of Education will be responsible for conducting research on integrating basic and advanced academic and problem-solving skills into vocational education.***

The Forgotten Half

William T Grant's book, *The Forgotten Half,* contends that 30 percent of high school graduates go to college and 20 percent of high school graduates have received enough vocational training to enable them to find entry level positions in business and industry. That leaves the other 50 percent of students, The Forgotten Half, who have a high school diploma but no employment skills. The report further states that because at least 50 percent of high school graduates do not go on to college, the development of good basic skills should not be the sole responsibility of the academic curriculum; vocational education should have an equally important role. The educational excellence movement has made the development of good basic employment skills and higher academic achievement a high priority for all students in many states and local districts.

A Nation Prepared

The Carnegie Forum's landmark report, *A Nation Prepared,* appeared in 1986. It asserted the need to "restructure schools to provide a professional environment for teachers, freeing them to decide how best to meet state and local goals for children while holding them accountable for their progress."

The Secretary's Commission on Achieving Necessary Skills (SCANS)

The Secretary's Commission on Achieving Necessary Skills (SCANS) is a monumental report done by the Department of Labor that concludes that basic skill competencies "should be taught and understood in an integrated fashion that reflects the workplace contexts in which they are applied."

The Commission spent two years studying what people need to know to hold productive and high paying jobs. As a result of this study, the Commission outlines five "competence skills" and three "foundation skills" that comprise the eight skill categories of "workplace know-how" students should have. These workplace skills should be developed from kindergarten through college, and all students should be assessed to determine their skill levels. The Commission emphasizes this approach does not change **what** is taught—only **how** it is taught. Retraining will be necessary for teachers to learn skills that "support new ways of interacting with students." The old way of learning from lecturing and memorization must give way to methods of learning by doing.

The report says the need for change becomes more grave as jobs become more high-tech, reducing the value of a high school diploma.

The *SCANS* Report has had a major impact on the process of restructuring schools in America.

This report identifies the following as the skills and knowledge that graduates will need to make the transition from school to work sucessfully.

A set of foundation skills

1. Basic skills such as ability to read, write, perform arithmetic and mathematical operations, and listen and speak effectively.
2. Thinking skills such as the ability to think creatively, make decisions, solve problems, visualize, and know how to learn.
3. Personal qualities, such as displaying responsibility, self-esteem, sociability, self-managment, integrity, and honesty.

A set of competencies that are at the core of job performance

1. Resources—Employees need to be able to identify, organize, plan, and allocate resources (such as time, money, materials and facilities, and human resources).
2. Interpersonal skills—Employees should be able to work effectively with others. Examples are the abilities to participate as a member of a team,

teach others new skills, serve clients or customers, exercise leadership, negotiate, and work with diverse people.

3. Information—Employees need to be able to acquire, evaluate, interpret, and communicate information, as well as use computers to process information.
4. Systems—Employees must understand complex interrelationships. They must be able to understand systems, monitor and correct performance within the system, and improve or design new systems.
5. Technology—Employees should be able to select appropriate technologies or tools for a task, apply technologies or tools for a task, apply technology to a task, and maintain and troubleshoot equipment.

The *SCANS* Report also lists methods for school-to-work transition. They are identified as:

1. Integrating academic and vocational programs
2. Getting students involved in a dialogue about what work requires
3. Beefing up programs to give students meaningful work experiences

Copies of *SCANS* Report, *What Work Requires of Schools: A SCANS Report for America 2000*, are available by calling, 1-800-788-SKILL

Workplace Know-how: What Work Requires of Schools

The know-how identified by SCANS is the result of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance.

Competencies
Effective workers can productively use:

Resources

Interpersonal Skills

Information

Systems

Technology

Teaching, Assessing, and Learning in Context

Example: Develop a plan to show how a production schedule can be maintained while a staff is trained in new procedure. Estimate the number of additional employees or overtime required. Prepare charts and . . .

The Foundation
Competence requires:

Basic Skills

Thinking Skills

Personal Qualities

Source: SCANS Report

Workforce 2000

Workforce 2000 is a study published in 1987 by the Hudson Institute in Indianapolis for the Department of Labor. The report spawned numerous business conferences and was the basis for President Bush's education reform in *America 2000*. *Workforce 2000* projected a continued shift from manufacturing to service employment and says: "The new jobs in service industries will demand much higher skill levels than the jobs of today." The report goes on to recommend better skills training and improved service productivity as needs for future job expansion.

What is Integration?

To integrate means to blend to form a whole. Briefly, the integration of academic and vocational education can be defined as applying academic concepts in a real world setting. Integrated instruction is an important concept for the 90s, but ironically, in the mid 1800s, a popular book called *Farm Algebra* explained how to use algebraic formulas around the farm—in planting crops, making quilts, adjusting patterns for sewing, adjusting measurements for recipes, etc. So, integrated instruction is merely a new phrase for an old process.

Effective integration will show students how specific academic skills apply to specific tasks and help students realize that academic skills are transferable to occupational situations. Integration can help students make meaningful connections among subjects so they can learn better.

The integration of vocational and academic education is a vehicle for stronger academic and vocational education curricula for all students. Integration is essentially a curriculum reform that requires changes in course content and pedagogy. Simply preparing instructional materials that integrate academic principles into vocational education is not integration. If integrating academic and vocational education is viewed solely as a vocational education issue—as it often seems to be—it will fail, and the school program and students will lose. A primary goal of integrating academic and vocational education is to make the experience of applied vocational education more accessible to academic students at the same time that advanced courses are made more accessible to students concentrating in vocational education. Integration can help to alleviate the practice of diluting both the academic and the vocational curriculum.

Robert S. Patterson, former Director of Vocational Education at the Texas Education Agency, spoke to a group of educators in Austin in 1991 and explained integration by using a ring as an example. By looking at a ring one can consider: *Why do people wear rings? What is the history of rings?*—history; *Where do the materials used to make a ring originate?*— geography; *What elements make up the ring? How are these elements processed?*— science; *How is the ring made?*— manufacturing; *What is the process of selling the ring?*— marketing; *Consider the design of the ring.*—art.

In August 1991, at a meeting of Texas Vocational Administrators, Commissioner of Education Dr. Lionel "Skip" Meno said our present education program in Texas is "preparing students for unemployment.," We teach them facts but do not teach them how to get and keep a job. He compared employment to lemonade; employment should be the final product of education, just as lemonade is a final product of lemon production. Dr. Meno went on to say, "I want lemonade—good lemonade." He doesn't care how it is made; if schools can do it while sitting under the shade tree, that's fine, but he wants quality lemonade.

Through integration of vocational and academic education, students can be prepared for employment. Integrating academic and vocational education will make learning more relevant for students. Students will learn and practice employment skills, among them higher-level thinking skills. Integration will also promote greater intermingling of students in both curricular stems.

In *The Cunning Hand, The Cultured Mind: Models for Integrating Vocational and Academic Education*, Dr. W. Norton Grubb states, "Because the support for integration has so many strands, and because schools differ so much in their structure, students and labor markets, federal and state policymakers should not impose a single model or decide on one 'best' approach." Researchers at The National Center for Research in Vocational Education (NCRVE) have attempted to present integration efforts initiated by various states and local school districts as models which can be evaluated and modified by schools and/or districts to fit local needs and conditions.

According to Sandra F. Pritz and Michael R. Crowe at the NCRVE at Ohio State University, the integration of vocational and academic education is based on these widely held assumptions:

- academic skills are embedded in vocational education
- vocational tasks provide for realistic use of academic basic skills; connecting academic learning with application strengthens students' basic skills
- neither academic basic skills nor vocational skills should be taught in isolation from each other; teachers need to make students aware of the bonding between academic basic skills and vocational tasks.

Commissioner Meno stated in a forum held May 15, 1991, on the campus of East Texas State University, that it is absurd to assume that prescribing any one model for restructuring education will work in every district in the state of Texas. The framework for integration should be based on the principles of site-based management—those closest to a situation have a clearer understanding of daily operations, changes needed, and obstacles to a goal or objective being achieved. Each school has unique characteristics. Integration can be successful if those characteristics are taken into consideration when setting up the framework and guidelines for the school integration plan.

He also said: "It is not a sin for a student to do one project for grades in several courses; this will help enable students to see the bridges between the subjects."

Vocational and academic teachers who want to develop an integrated program can choose from several options. They might choose a cooperative arrangement between two teachers in which they work with a group of students and correlate teaching methods, terminology, and subject matter. All or most of the staff might make an agreement to deal with some aspect of a theme or topic for a time. With very little rearranging of the school schedule, a block of time could be set aside during which two subjects are taught. Career pathways can be designed and implemented for grades 9-10. New "applied" courses can be designed. Student learning contracts, visiting speakers or specialists, cooperative learning, outcome-based education, applied learning in a problem-solving mode, learning styles, thematic teaching, and academic development plans are all effective in integrating academic and vocational education.

Not everything being called integration constitutes full integration. Full integration means that the total academic/vocational program is seamless. Academic and vocational teachers work as equal partners to meet students' educational needs. Their interaction and mutual support are an integral part of daily instruction. With true integration, all the pieces of the puzzle of education fit together to show the complete picture.

Elements for Integration

- Vision and commitment
- Consistent support
- New resources
- Autonomy for teachers
- Teacher training and retraining
- Sustained efforts

"There is no substitute for teachers and administrators sitting down and defining for themselves what problems they want to address, what they most want to accomplish and what resources they have to meet their goals."

W. Norton Grubb, *Vocational Education Journal*, February, 1991

The Changing Workplace

Commissioner Mary Scott Nabers of the Texas Employment Commission has stated that the economic destiny of Texas lies in the abilities of our people. "Economic development must become focused on the only replenishable item we have—human capital."

She says that today's wealth is created by "innovation and technology and creativity—all by-products of people," and to survive we must create partnerships among business, government, and education to develop our human potential. "The competition is fierce and it is worldwide. Like it or not, we live and compete in a global society.

"If economic prosperity depends on producing high value goods and services, we must do a better job of preparing our people for the workplace."

Commissioner Nabors continues by stressing that out of economic necessity, the workplace, as we know it, is changing. This change is "reducing the number of the very lowest level jobs and increasing skill demands at all other levels." New jobs will require more "thinking, learning, analytical workers. The number of jobs based on repetitive acts, easily learned by imitation, is falling. Employees must have a greater ability to work in a more uncertain and non-routine environment and to interact with a wider variety of individuals."

J.C. Papritan gives a perfect example of this concept in the April/May 1985, *Welding Journal*: "For a career in welding, students are likely to need computer literacy, metallurgy, blueprint reading, heat control, distortion control, as well as knowledge of new and emerging welding techniques, such as robotic welding, laser beam welding, plasma arc welding, arc brazing, resistance brazing, laser beam cutting, carbon arc cutting, etc. These new knowledge areas and new kinds of skills appear to require enhanced academic background and an increase in process comprehension."

Another good example is found in *U.S. News & World Report*, June 26, 1989. "Auto mechanics in 1965 needed to read and understand 5000 pages of service material text to fix any auto; today's same mechanic must be able to decipher and use 465,000 pages of technical text."

It really is a changing workplace!

Today's vs. Tomorrow's Workplace

Traditional Model	High-Performance Model
Strategy	
Mass Production	Flexible Production
Long Production Runs	Customized
Centralized Control	Decentralized
Production	
Fixed Automation	Flexible Automation
End-of-line Quality Control	On-line Quality Control
Fragmentation of Tasks	Multiskilled Teams
Authority with Supervisor	Authority with Workers
Hiring/Human Resources	
Labor-Mgt. Confrontation	Cooperation
Minimal Qualifications	Basic Skills Screening
Workers as a cost	Workers as an Investment
Job Ladders	
Internal Labor Market	Limited Internal Market
Advancement by Seniority	Advancement by Certified Skills
Training	
Minimal for Production Workers	Training for Everyone
Specialized for Craft Workers	Broader Skills Sought

Source: SCANS Report

Education in the United States Today

The problems in public schools in the United States are many and varied. There are many complaints about our education system and its graduates. Few realize that the last major change in education occurred in 1910 when vocational education was added to the American educational system.

When we think of all our current technology and the continuous influx of new knowledge and discoveries, it's ironic to realize that virtually all subjects now taught in the public schools were also taught in 1910.

In 1910 approximately 17% of the U.S. population graduated from high school. That small percentage leads to the conclusion that American high schools were probably designed for a select group of people. Currently, approximately 70% of the U.S. population graduates from high school. We're still using the same teaching methods and school structures for this 70% of our population that early 1900 teachers used for that 17% of the population!

Current Teaching Methods

John Goodlad, in *A Place Called School,* makes some interesting observations about some public school classes his research team visited.

> "Students in the classes we observed made scarcely any decisions about their learning.... Nearly 100% of the elementary classes were almost entirely teacher dominated.... A similar situation prevailed in 90% of the junior high and 80% of the senior high classes, and the increase in student decision making was in only one or two areas, usually somewhat removed from the learning activity itself, and more in the arts, physical education, and vocational education than in the academic subjects...
>
> We observed that, on the average, about 75% of class time was spent on instruction and that nearly 70% of this was 'talk'—usually teacher to students. Teachers out-talked the entire class of students by a ratio of about three to one...
>
> Indeed, the bulk of the lecturing dominating at all levels was to whole classes. Teacher-to-small-group interaction rarely occurred at any level. When students did become involved actively in the dominant lecturing mode, it was almost always to respond to the teacher, not to initiate an exchange."

Student Problems

If we read about student problems in 1940, we find the most common were:

- talking
- chewing gum
- making noises
- running in the halls
- getting out of line
- wearing improper clothes and
- not putting paper in the trash.

The most common problems in today's schools are

- low test scores
- drug and alcohol problems
- high dropout rates
- high absentee rates
- high pregnancy rates
- high illiteracy rates, and
- lack of quality graduates.

Obviously, there is no comparison between the student problems of now and then.

We can gain insight into the current problems of education in the United States when we stop and realize that today's students are taught in schools that are structured in the same way as they were in 1910. They are also taught with the same instructional techniques as were used in 1910. Those instructional techniques were modeled after Henry Ford's assembly line process developed during the industrial revolution. Business in the 90's is doing away with assembly line techniques. The world has moved on to the technological revolution, and our scholars must develop new models of education.

Can You Believe This?

- Texas ranks 47th among all states in literacy. That means only three other states have a higher percentage of illiterate citizens.
- Twenty percent of Texas workers cannot read or write or do simple math. This compares to five percent in Japan.
- Thirty-three percent of all adults in Texas are functionally illiterate, reading at or below a sixth grade level.
- One hundred of Texas' 254 counties have no literacy programs.
- Over 75 percent of Texas prison inmates are school dropouts.
- With the projection that approximately 85 percent of tomorrow's jobs will require at least a high school education, one Texas worker in five could be unemployed in the near future.
- Fifty-one percent of adults receiving Aid to Families with Dependent Children did not complete high school.
- It is estimated to cost $17 billion annually to cover the costs associated with school dropouts. Dropouts are far more likely to be unemployed, to wind up on welfare or in prison, and to become unwed parents.
- Texas leads the nation in the number of convicts on parole or probation. Over 109,000 parolees and more than 308,000 probationers currently reside in Texas.
- It has been estimated that 80-90 percent of convicts in Texas prisons are functionally illiterate and about the same percent are substance abusers.
- Texas ranks number one in the nation in teenage pregnancies among girls age 15 and younger.
- Texas ties with New Mexico for the highest rate in the nation of people without health insurance.
- Twenty-six percent of the population in Texas is uninsured.

Texas Business Today, From the office of
Commissioner Mary Scott Nabers, February 1992.

Significant Statistics

- Twenty-three percent of Texas high school juniors—42,000 students or roughly the population of Temple, Texas—cannot expect to enter college or succeed in a job that requires minimal literacy and computation;
- Thirty-eight percent of Texas ninth graders—88,000 students—cannot read, write, or perform the mathematical calculations necessary for high school work;
- Nearly one in five babies born in Texas each year has a single mother;
- One third of babies born in Texas each year have late or no prenatal care;
- More than 350,000 babies born each year in the United States are affected by cocaine;
- More than 54 percent of the labor force in Texas in 1987 were parents with children younger than 17.
- Forty-eight percent of mothers with children under age six and 63 percent of mothers with children aged 6 to 17 worked outside the home in 1980; this figure has undoubtedly risen since then.
- An estimated 30,000 Texas children younger than six care for themselves while their parents work.
- Roughly one of every four children in the classroom comes from a family affected by alcoholism.
- More than 65,000 cases of child abuse are reported annually.
- Children from more than 100,000 households ran away from home in 1985, and children from more than 11,000 households never returned.
- The unemployment rate for dropouts is twice that of graduates. Each high school dropout will earn an estimated $400,000 less over her or his lifetime than a person who graduates.
- Sixty percent of Texas adults who live in poverty have not graduated from high school.

Vocational Education Overhaul

Vocational education is in need of an overhaul. Vocational education programs are often, literally and figuratively, in the basement of the school. The National Assessment of Vocational Education (NAVE) found that despite the fact that more than 97% of students took at least one vocational course before they graduated from high school, vocational education is perceived as a "dumping ground" by many educators. NAVE reports that the educational reform movement has created a climate in which academic education is more highly valued than vocational education. There is no doubt the increasing preference for higher education is contributing to the decline in vocational education enrollments. Vocational education must be reformed if it is to survive.

Focus on College Preparation

William L. Lepley, Director of the Iowa Department of Education, thinks that possibly the biggest failure of American public education is that in most American high schools, the majority of administrative and teaching time is focused on preparing students for college instead of advising them that the majority of future jobs will be for people with less than a bachelor's degree.

He states that nine out of 10 ninth grade students say they plan to attend college (only about 34% do attend) and thus have little room left in their schedules for vocational courses. Therefore, when they either don't enter or drop out of college, as many do, they are likely to have no marketable skills and no clear path to employment.

Most drift in and out of low-skill jobs until at about age 27 they realize the need for specialized training and enroll in a community college. This means they have spent five to eight years wandering aimlessly before beginning a program that prepares them for the work place.

Students who do not plan to go to college see little advantage in working hard in high school because good grades and quality courses do not ensure better wages or training opportunities—employers seldom look at high school grades. Therefore, many students look for courses in which friends are enrolled and for courses that will be fun and easy.

The Bottom Line Is . . .

Students Must Know:

1. The fastest growing/slowest growing jobs in Texas and plan their courses accordingly.

2. What high school course will best prepare them for the future job market.
3. What jobs pay and the educational background each requires.
4. Differences between and the benefits of trade schools, community colleges, and universities.
5. What skills employees look for when hiring.
6. How to write a resume and dress for and conduct themselves in an interview.
7. Their limitations: "Everyone can't be a superstar."
8. What it costs to live (estimated monthly costs for food, housing, clothing, utilities healthcare, transportation, insurance, child care, etc.)
9. Divorce rate is pushing 50% nationwide: therefore students must be able to support themselves.
10. Half of their lives will be spent at work.

Education Reform vs. Education Restructuring

The word reform is defined as correcting weaknesses or differences in existing patterns or practices. Education reforms have been undertaken all over the country throughout this century. Most of these reforms have been attempts to *repair* the system. We've gone to more years, longer days, competency testing, teacher evaluations, and more graduation requirements in an attempt to correct visible structural cracks, but these steps have not solved our problems in education.

IBM's former education director, Jack Bowsher says: "If IBM were producing results comparable to those of our schools— in other words, if 25 percent of their computers were never making it to the end of the assembly line and 90 percent of the completed ones didn't work most of the time— the last thing the company would do is run the same assembly line an extra hour each day or an extra month each year. Instead, IBM would rethink the entire production process."

Instead of repairing the cracks in the current system through *reform* efforts, we must rethink the process. We must begin with the foundation of education, set our priorities and goals, and *restructure* the entire education process. Restructuring goes deeper then reform. It starts with reinforcing the foundation and then moving upward.

Restructure entered the popular education lexicon in 1986, when *A Nation Prepared*, the Carnegie Forum's landmark report, asserted the need to "restructure schools...." Changes geared toward enhancing student success being undertaken in scattered locales are at the heart of what some experts have termed school "restructuring." They well may fundamentally change the institution of schooling as we know it. Considering the high failure rate of the exit-level Texas Assessment of Academic Skills (TAAS), few educators would argue the need for change. We are in the midst of a crisis. We can no longer afford to ignore the fact that our children are not receiving the knowledge and skills necessary to compete successfully in the workplace.

A Process, not an Event

"Restructuring a school is quite similar to learning to drive on the left side of the road after you've been driving on the right side your whole life: you can't do it without a few false starts. Similarly, shifting from traditional top-down management to shared decision making is wrought with conflict, confusion, and disorientation."—Laurence W. Aronstein, Marcia Marlow, and Brendan Desilets, April 1990, *Educational Leadership.*

To ensure that our new educational structures are successful, we must re-think *how* and *what* we teach our children; we must realize that each community is different and no one educational structure will work for all. The new structure must consider economic and cultural attributes of the community. The schools must be built around student participation and achievement.

Students must be taught *how to learn* and *how to transfer* information to learn new concepts. Teachers must teach students to be adaptive, creative, and innovative. No longer can classes be teacher centered with teachers lecturing most of the time; there must be an abundance of student-to-teacher and student-to-student dialogue and discussion. The new structure will be built with massive changes in curriculum, teaching methods, and teacher/administrator roles and responsibilities.

Dr. Jerry Pepple of the University of Illinois says the common theme throughout reform efforts must be the importance of applications. "We need to develop strategies that connect mathematics and science problems to real-world issues— both personal and societal." He also sees that most reform efforts must be centered on teaching the full spectrum of cognitive levels. "The teaching of isolated, discrete facts and principles is no longer adequate—students will need to demonstrate their understanding of the science, mathematics, and technology concepts through some means other than pencil and paper tests."

Restructuring education is a process, not an event. We cannot expect change to occur and be sustained without vision, commitment, and leadership. According to IBM's Chief Executive Officer John F. Akers, "The only way we're going to improve our schools— and therefore the country— is one student at a time, one school at a time, and one school system at a time."

Why Change?

1. The present system of arranging learning has become an end in itself and a barrier to learning. For example, it often:
   - a. allows teachers and administrators to perpetuate the system rather than accept the responsibility for constructive change;
   - b. separates people from each other and from the real world and isolates disciplines and tasks, creating problems of communication, understanding, and priorities;
   - c. ignores interdisciplinary opportunities, discourages caring and trust, hinders the development of common standards, and allows excessive specializations;
   - d. rewards covering and recalling of material, rote learning, grades, and GPAs;
   - e. substitutes the goal of learning for the goal of graduating;
   - f. promotes the "normal curve" approach to categorize students, discriminating against their potential and encouraging them to manipulate, play games with, or resist the system rather than master material, develop responsibility for their own learning, and build lifelong skills;
   - g. consumes the time needed for reflection on the use of material, solving problems individually and collectively, and relating materials to the real world;
   - h. leads to excessive teacher activity and to student passivity, thereby exhausting and frustrating both groups while promoting mediocre performance;
   - i. grants freedom and opportunity to students without demands for requisite responsibility and self-discipline;
   - j. encourages, and may depend upon, an ethically neutral, valueless, depersonalized approach to education and to life;
   - k. limits the influence of teachers in decisions while it solicits renewal and reform from those distant from the classroom;
   - l. produces an unhealthy cynicism among teachers, students, administrators, and, at times, the public:
   - m. limits parental and community involvement in the education of young people;
   - n. makes education a dull routine instead of a stimulating activity.
2. Financial realities indicate that the public will no longer support an outdated education system.
3. Recent affluence, commercialism, media influence, and so on, have produced a generation that cannot be successfully taught in the ways earlier generations were.
4. Business and industry, facing new foreign and domestic realities, can no longer rely on the educational system to produce competent workers, creators, and decision makers.
5. The nature of social, political, and environmenal problems at home and worldwide demands a well-rounded and active citizenry.

—Dan Brickley and Tom Westerberg, *Educational Leadership*, April 1990

Comments from the Texas Commissioner of Education About Restructuring Schools in Texas

In July of 1991, Dr. Lionel "Skip" Meno assumed the position of Commissioner of Education for Texas. Since that time he has met and spoken with many educational groups to explain strategic components of his plan for restructuring Texas schools.

Commissioner Meno met with the Texas Business and Education Coalition in Austin in November of 1991 and addressed the problem of current levels of student achievement in Texas schools and "real world" requirements. He said student instruction and assessment should be authentic to the real world. In the past, Texas, like many other states, has considered curriculum, programs, instruction, and assessment non-negotiables in public education. All students have been expected to conform to traditional/standardized models. We have been more concerned with what is presented to students than what students learn. What we have been doing is not working. Many students have become experts in recalling factual information and are excelling in the traditional educational system, but they fail in the workplace because they cannot apply the information. Meno contends that we must change; we must overhaul a poorly functioning system that is not meeting the needs of a society competing in a global marketplace.

He went on to say that the only non-negotiables should be 1) students and 2) the "level of achievement required by the real world." Everything else should be totally negotiable and the single goal should be "excellence and equity in student performance."

"If we are to provide leadership, we must challenge the standard convention," Meno said.

He emphasized there is no one model program for all schools to follow; each school system must form and adapt a model that is appropriate for its community situation. However, each school should develop clear outcomes based on real world requirements.

To achieve these improvements, Meno said teachers must be trained in a wide range of teaching strategies. They must also be comfortable with curriculum content and feel "ownership" of new curriculum standards. He has called for additional staff development time of 15 to 20 days a year, more use of innovative technology in instruction, and a reorganization of the Texas Education Agency. He also related the need for a state assessment system which accurately measures whether students are achieving as they should.

Finally, Meno suggested the business community can help by keeping the reform focused on real, world class outcomes, expanding mentoring programs, and providing technical assistance and resources to improve the knowledge of teachers.

In other speeches, Meno has addressed the problem of low math scores of Texas graduates. "When 50 percent of the kids graduating from high school in Texas have never taken a course in high school mathematics, I think that is a real severe reason for concern," he said. In an effort to alleviate this problem, he recommended that college-bound students have at least 24 course credits by graduation instead of the current 21 credits, and three of those courses be in math.

He has also stressed the need for teachers to work as a team. He realizes that will require time. "If you don't give people as educational professionals time to come together, to upgrade their schools and to work as a team to restructure the schools with a series of new ideas— looking at the students they have and the results they want to achieve—there is never going to be change."

Essential Components of a Successful Education System

Nine components — characteristics necessary for a school system to achieve the national education goals — are:

1. The system is committed to four operating assumptions:
   - All students can learn at significantly higher levels.
   - We know how to teach all students successfully.
   - Curriculum content reflects high expectations for all students, but instructional time and strategies vary to ensure success.
   - Every child has an advocate.
2. The system is performance- or outcome-based.
3. Assessment strategies are as strong and rich as the outcomes.
4. Schools receive rewards for success, assistance for improvement, and penalties for failure.
5. School-based staff have a major role in making instructional decisions.
6. Major emphasis is placed on staff development.
7. A high quality prekindergarten program is established, at least for all disadvantaged students.
8. Health and other social services are sufficient to reduce significant barriers to learning.
9. Technology is used to raise productivity and to expand access to learning.

Characteristics of Successful Schools

1. A safe and orderly environment conducive to teaching and learning is evident.
2. Students and teachers exhibit a business-like attitude which creates an atmosphere of constructive energy in the school.
3. The school climate is warm and caring.
4. The schools have an established admissions process based on student interest in a career speciality or set subjects.
5. The schools recognize and accept the dual mission to prepare students for an occupation and for college.
6. High expectations are maintained for all students; grouping by ability is minimized.
7. The curriculum is organized around an industry or a discrete set of subjects.
8. The schools foster the integration of theory and practice in the courses of instruction.
9. Strong linkage with business and industry and sometimes with local institutions of higher education exists.

—as identified by the National Center for Research in
Vocational Education (NCRVE)

Characteristics of Today's and Tomorrow's Schools

Today's	Tomorrow's
Strategy	
Basic Skills Development	Focus on Thinking Skills
Testing Separate from Teaching	Integral Assessment
Learning Environment	
Recitation and Recall from Short-term Memory	Students Construct Knowledge
Work as Individuals	Cooperative Working
Hierachically Sequenced—Basics before Higher Order	Skills Learned in Real Problem Context
Management	
Supervision by Administration	Learner-Centered Teacher-Directed
Outcome	
Only Some Students Learn to Think	All Students Learn to Think

Source: SCANS Report

Business and Industry Complaints About Workers

Basic skills, employee skills, technical skills—these are some of the major things that business and industry find lacking in today's workforce.

Texas Instruments estimates it spends approximately $2 million per year teaching remedial reading to employees. Businesses and industries in the United States estimate that altogether, they spend in excess of $30 to $40 billion per year in employee remediation of basic skills.

Employers frequently complain that their employees are lacking in employee skills such as punctuality, dependability, and good work attitudes.

Ironically, technical and employee skills are only taught in vocational courses and only 20% of our high school graduates have had enough relevant vocational courses!

What Employers Want: A Summary

Once upon a time, bank tellers counted out cash, deposited checks, and made sure the balance sheet added up at quitting time.

The typical bank teller these days must also be able to advise customers on a wide range of financial services, make "spot" decisions, and use a wealth of database information previously available only to managers.

The transformation of the teller's role, argues a report issued jointly by the American Society for Training and Development and the U.S. Department of Labor, is indicative of the extraordinary changes in the workplace—changes with important consequences for the education of students in grades K-12. "To be effective in the workplace, the new bankteller may not need to have the same degree of expertise in a narrow area, but instead must have a good knowledge of a wide range of skills," the report argues.

As part of a major research project examining the skills needed for work, the report *Workplace Basics: The Skills Employers Want* identifies seven skills groups. They are:

Learning to Learn.
Employers are more frequently shifting employees between jobs and responsibilities, putting a premium on the ability to absorb, process, and apply new information quickly and effectively.

Listening and Oral Communication.
Fifty-five percent of time in communicating is spent listening, but schools offer scant instruction in oral communcation or listening.

Competence in Reading, Writing, and Computation.
Most employers today cannot compete successfully without a workforce that has sound basic academic skills. Although schools frequently teach isolated reading, writing or computational skills, use of these skills on the job require additional proficiency in summarizing information, monitoring one's own work, and using analytical and critical thinking skills.

Adaptability: Creative Thinking and Problem Solving.
An organization's ability to succeed depends on using creative thinking to solve problems and overcome barriers; thus a premium is placed on workers who develop such skills.

Personal Management: Self Esteem, Goal Setting/Motivation, and Personal/Career Development.
Taking pride in work accomplished, setting goals and meeting them, and enhancing job skills to meet new challenges are necessary characteristics of employees. Unfortunately, the educational system provides little formal training to develop such attributes.

Group Effectiveness: Interpersonal Skills, Negotiation, and Teamwork.
The ability to work cooperatively in teams is increasingly important for workplace success.

Organizational Effectiveness and Leadership.
Employers want employees who have some sense of where the organization is headed and what they must do to make a contribution. . . and who can assume responsibility and motivate co-workers.

Source: *Workplace Basics: The Skills Employers Want.* American Society for Training and Development and U.S. Department of Labor. Employment and Training Administration. 1988

Jobs of Tomorrow and Their Educational Requirements

William Kolberg, President and CEO of the National Alliance of Business, says, "We are not responding to the needs of employers or the majority of America's young who will not go on to college. Despite the fact that 82 million U.S. jobs do not require a college degree, our entire education system is geared to those students who will be attending traditional, four-year institutions."

Only 34% of today's graduates enroll in college, yet the curriculum is designed to prepare most students for college enrollment. Of the 34% who enroll in college, only 17% will complete requirements for a degree.

Only 15% of tomorrow's jobs will require college degrees. That means that 85% of the jobs will require no college degree, yet only 20% of high school graduates have taken any vocational training that gives them knowledge about trades and vocations.

Skills for Tomorrow

Service, quality and *technology* are the key words for future employment. Sucessful workers will be familiar with all three concepts.

Job market experts tell us that in the emerging technical workplace, basic academic skills are the most important prerequisites for success. Work in the future will be increasingly technical and thus will require higher education. When industry personnel discuss "basic math skills," i.e. for sheet metal workers in the aircraft industry, they mean a minimum of two years of algebra and one year of geometry.

Integration Is A Solution

Integrating academic and vocational education is not an end in itself. It is a way of overcoming some deficiencies of the American high school, including those that developed as a result of the division between academic and vocational subjects. It provides a vision of what secondary education could be. Integrated academic and vocational education forces us to recognize the varied capacities— general and specific, manipulative and behavioral as well as cognitive— that successful individuals possess. Efforts to integrate academic and vocational education may be the best stimulus to reconstruct the American high school.

Integration serves a dual purpose: (1) it is a method for preparing non-college-bound students for life and jobs in a changing world, and (2) it is a method of giving college-bound students hands-on experiences for relevant applications of academic learning to prepare for jobs in a changing world. Integration of vocational and academic education, with input from business and industry, can restructure schooling for all children.

In its simplest form, integration is nothing more than good, sound teaching practices that make abstract concepts more understandable by applying them to real-life situations. Integration has the potential to reinforce the student's acquisition of basic and higher order academic skills, enhance occupational skill training, and renew the way in which both academic and vocational education are delivered.

A joint policy statement by the National School Boards Association and the National Association of State Boards of Education reads:

Integration of vocational and academic education can improve both teaching and learning, address problems in our new global economy, and lead to equal opportunity for all students. Vocational education can be used to make academic education more concrete and understandable, and academic education can be used to point out the vocational implications of all education. The process of integrating studies allows students to take the curriculum pieces of the educational puzzle and put them together to see the "big picture."

Integration Requirements

Successful integration of vocational and academic education requires these "essential elements"

Time

- to bond, dream, and motivate through team building and goal setting activities.
- to plan, discuss essential elements and related content in subject areas, and share ways (ideas or physical materials) to reinforce concepts or improve instruction.
- to learn new and innovative methods of instruction and alternative methods of student assessment and evaluation through scheduled staff development.

Change

- in the structure of schools and in methods of teaching
- of assessment and evaluation techniques for students and teachers.
- from passive learning to active learning for all students assuming responsibility for their own learning.
- from teaching recall of information to teaching application of information.
- to increase communication lines between business/industry, schools, and parents.
- in public awareness of the values of vocational education.

Desire

- to overcome obstacles in the pathway to integration.
- to find a way for all students to learn.
- to motivate students in order to create productive citizens for tomorrow.

Important Components of Integration Reconstruction

1. Eliminating the "shopping mall high school" which allowed students to "mill around" and take unrelated courses with coherent sequences of courses related to broad occupational clusters.
2. Enhancing the engagement of students by replacing the conventional teaching of academic courses with more activity-based and student-initiated methods and by clarifying the importance of education to future careers.
3. Reducing the isolation of teachers by providing new opportunities and motives for collaboration.
4. Reducing tracking and segregration of students by eliminating (or at least weakening) the divisions between academic and vocational students.
5. Providing a clear vision of how business should participate in high schools.

Problems That May Be Encountered During the Process of Integrating

Groups that have begun integrating academic and vocational education have identified three main obstacles to reform. They are:

- Turf
- Time
- Change

These and other problems are discussed on the following pages.

Problems With Turf

"Turfism" is common among vocational teachers, academic teachers, administrators, and business and industry. Each group is interested in protecting its own interests. Probably the easiest way to overcome this turf problem is through collaboration. When vocational and academic teachers compare the essential elements of their curricula, they're usually amazed to discover that they teach many of the same essential elements.

Collaboration between school personnel and business and industry usually results in like discoveries—they really do have a lot in common. All they need is the time to sit and talk about their goals for education.

Problems With Time

Time for planning, implementing, and maintaining the initiatives is essential.

Common preparations require collaboration between teachers.

Time for staff development is necessary because teachers must be trained in new teaching methods. Administrators and parents are sometimes unwilling for teachers to be out of the classroom to obtain this training; but true change in our teaching methods cannot occur without teacher training.

How to Make Time for Restructuring Schools

Purchased time—A district pays teachers for coming in on vacation days or over the summer, or a fund pays substitutes to take over classes.

Borrowed time—Each class period is lengthened by a few minutes so studnets can eventually be released for a partial day of teacher planning. Or, in team teaching, team members alternate between teaching and planning.

Common time—The entire day is rescheduled so specific groups of teachers will have the same free period.

Freed-up time—Student teachers, parents, community members, volunteers, or administrators take on teacher tasks or classes.

Better-used time—Faculty meetings deal exclusively with planning rather than announcements or administrative details.

New time—Teachers are compensated in new ways—for example, with in-service credit for using their own time.

Rescheduled time—The school calendar is changed to provide more teacher planning days. Some schools are going to 4 day weeks; the 5th day is used for teacher planning and club meetings.

—The National Center for Innovation of the National Education Agency

Problems With Change

No one likes change. We tend to feel more comfortable with what we're used to. We're afraid if we try something new— we might fail! But we must realize that we do learn from our mistakes, and we must overcome our fear of failure. Habits and methods can be changed when we realize the necessity for change and make the effort to change.

Some Problems Others Have Encountered When Integrating Academic and Vocational Education

1. Turf, territorial issues
2. Time restraints
3. Coordination/cooperation
4. Graduation requirements/advanced diplomas; Carnegie units; no room in graduation plan; graduation credits; report cards
5. Image of vocational education; labeling; vocational stigma; stereotypes; parent/community perception; prejudice

6. Ignorance of other groups; lack of understanding and communication
7. Inservice time; time for teacher training
8. School board agreement
9. Priorities
10. Makes electives "not fun"
11. Community/parental involvement— understanding— ignorance— lack of understanding
12. Attitudes: counselor, apathy, business, parent, student, community
13. Traditional separation of all courses; separate inservice schedule; program stratification; division of academic/vocational students
14. Need to focus on future
15. No consensus of definition— vary among levels
16. Organized funding structures; difference in funding, goals
17. National opinions don't favor vocational education
18. No credit for applied courses - dual credit
19. Community preconceptions
20. No requirements except for vocational education
21. TEA regulations (funding); federal legislation
22. Logistics; locations, physical separation; facility differences; isolation; existing school structure; building proximity
23. Site-based management
24. In rural area, breaking with tradition
25. Selling the "concept"
26. No guidelines, mandates, funding
27. Concept of college for everyone
28. Limited curriculum materials (integrated materials, applied materials)
29. Resistance to change; easier to stay same; apathy; teacher mind set; mistrust
30. Shortage of resources
31. Lack of time and money for planning and developing programs
32. Overcrowded curriculum in academics
33. Vocational responsibility
34. Vocational educators think they already do it
35. Lack of leadership, facilitators (national, state, and especially local); lack of initiative
36. Where does it begin— who starts it, and where?; lack of clear vision

37. Lack of knowledge of our work force by academic teachers
38. Job security
39. Lowering of standards by academic teachers
40. Political issues/gaining consensus
41. Curriculum specialist in academic/lack of knowledge in vocational area
42. Raw material
43. Finger pointing
44. Different goals - elitism
45. Counselors; inadequate counseling; schedule/choices, can't do both, registration bias; registration bias to academic
46. Resource and facility management
47. Teacher background
48. Staffing logistics and curriculum (cross-training)
49. Lack of conference time between academic and vocational
50. Lack of knowledge of curriculum
51. Lack of models/integrated curriculum; lack of curriculum coordination
52. Lack of support from the top/leadership, administration, board, parents, teachers, counselors, community
52. Class loads
54. Wide range of entry-level academic abilities
55. Doesn't always fit essential elements
56. Out of date teminology— stigma about vocational education (students and teachers)
57. Limited knowledge of academic teachers; lack of teacher know-how; knowing changes to make
58. Lack of good staff development; lack of staff development time
59. Scheduling problems (especially small schools)
60. Teacher philosophy about what an educated person is
61. Teacher preparation at college level
62. Assessment, non-competitive testing to performance; mandated testing; teaching TAAS tests
63. Whole system is barrier (regulations, law restrict sharing)
64. Teacher preparation pre- and post-; certification; teacher preparation at college level
65. Concentrating resources on top students
66. Vocational teachers not good role model

67. Instructional arrangement
68. Mandates biased to academic
69. Vocational educators feel unqualified
70. Academic education feels vocational is unimportant
71. Vocational resents spending their time on academics

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1-800-848-4815

Any restructuring effort will encounter problems—but the problems can be overcome! Cooperation and a concentrated effort between academic teachers, vocational teachers, administrators, business/industry, and parents are the keys to overcoming problems.

How to Begin

Just as a builder needs a detailed blueprint before building a house, those involved in integrating academic and vocational education need a plan consisting of goals and methods for achieving those goals. This *Blueprint for Integrating Academic and Vocational Education* explains step-by-step procedures for integrating the curriculum for student achievement and success.

Thorough and intensive planning is essential for successful integration. Because no two schools are exactly alike, no one integration plan will work for all schools. If integration is to be successful, those involved in the planning process must consider the local school community and plan around the needs and attributes of that community.

Previous reform efforts have tried to repair the cracks and holes in our educational system. Many of them focused on "quick fix" methods. We hope to restructure the system, from the ground up, starting with the foundation.

The foundation of the educational system is teachers. This foundation must be structurally reinforced with new techniques, methods, and ideas for teaching. This can be done through staff development. Without staff development, restructuring is doomed. Previous school reform efforts suggest capable, informed, and empowered teachers are a must for successful reformation. The preparation of teachers will take one to three years. The length of this preparation is dependent upon time, finances, and needs, which must be determined by each school district.

Change is not an overnight process but an evolution. This *Blueprint for Integrating Academic and Vocational Education* is our recommended blueprint for change in public education. With this *Blueprint* and plenty of comprehensive planning, we think your school will be able to meet the challenges of the future in a proactive, rather than a reactive manner.

Outline of Procedures for Integration

I. Choose a coordinator

II. Select a focus group

III. Select courses to be integrated

IV. Select teacher/administrative personnel

V. Have a meeting of focus group and teachers to discuss common goals and individual roles

VI. Hold staff development for all participating teachers and administrators

  A. Staff development topics EDTC has determined to be of utmost importance (listed in sequential order):

    1. The Need for Restructuring in Public Schools
    2. Outcome-Based Education
    3. Team Building/Site-Based Management
    4. Creating Partnerships; Community, Business and Industry, Parents--"The Role You Play in the Future"
    5. Shadowing
    6. Total Quality Management
    7. Learning Styles (General Overview & Specific Subject Areas)
    8. Authentic Assessment and Follow-up
    9. Cooperative Learning (Overview and Specific Strategies)
    10. Strategic Planning
    11. Competency-Based Education and DACUM Training
    12. The Counselor's Role in Restructuring
    13. Supervised Activity and Lesson Plan Writing

  B. Additional staff development topics you might want to consider

    1. Integrated Academics
    2. Apprenticeship
    3. Career Pathways/Coherent Sequencing/Development of Graduation Plans

4. Communication Skills Needed in Business and Industry
5. Decision Making Skills
6. Developing Basic Skills
7. Developing Employee Skills
8. Empowerment
9. Higher Level Thinking Skills
10. Mastery Learning
11. Mentoring
12. Peer Coaching
13. Self-Directed Work Environment
14. Teaching of Business Skills
15. Teaching of Life Skills

VII. Select integration model

VIII. Select instructional model

IX. Select students/criteria for the courses/program

X. Establish scheduling/time frame arrangements

XI. Establish the role for career development/guidance

XII. Determine roles and activities for insuring support and involvement from all participants

XIII. Determine evaluation/assessment procedures

XIV. Determine expansion of integration concepts for the future

XV. Determine funding sources for restructuring

XVI. Write the three-year integration plan

Step-by-Step Plan

- Choose a coordinator

  The job of coordinator requires quite a bit of time for organizing and soliciting participation. All four of our sites this year put the vocational director in this position. Who ever it may be, he/she should be thoroughly convinced of the need for change in our educational system.

- Select a focus group

  We have noted that the higher the level of involved and committed administrators, the more successful the project seems to be. For maximum potential of your integration project, we suggest you try to involve the superintendent or assistant superintendent and encourage him/her to take an active role in the entire project.

  A principal or vice-principal, the vocational director, and a counselor (all counselors, if possible) are also necessary for your focus group. Other members should include at least one or two of the following: academic teacher, vocational teacher, parent, school board member, and student. Also necessary are at least three people from local businesses and industries.
  This diverse mixture is suggested so the project will have input from various points of view.

- Select courses to be integrated

  After selection of the focus group, they need to meet to discuss education needs and trends for jobs of the future and to look at how the local school is preparing students for those futures. Other school problems, such as test scores, failure rates, absentee rates, etc. should also be discussed. From these discussions the group should be able to come to a consensus about areas of the curriculum where courses can be integrated to fit the needs and the problems of the school and of the community.

  The key to successful school systems is their ability to measure what they want against what they already have, and then, through research and intellectual practice, work to close that gap.

- Select teacher/administrative personnel

  The teachers must represent the disciplines to be integrated. Both vocational and academic teachers are necessary. Voluntary participation of committed people is best. Don't force anyone to be involved in the integration process. The level of commitment by both academic and vocational teachers is a significant factor in determining the success or failure of integration. If necessary and feasible, offer small stipends or extra preparation time as incentives.

- Have a meeting of focus group and teachers to discuss common goals and individual roles.

  Many teachers have been away from business and industry for many years. Others have never worked in business or industry. This meeting is a good time for business personnel to talk with teachers about academic and social skills needed by entry level workers. These conversations are critical for successful integration.

- Hold staff development for all participating teachers and administrators

  Perhaps the term staff development should be changed to staff renewal since it is actually a means for continuous "growth in practice". John Goodlad, in *A Place Called School,* says, "The school is the place for change." Staff development, or staff renewal, is the medium for this change. Serious staff development involves personal learning about one's self in relation to one's students.

After completing one year of planning and preparation for interdisciplinary teaching at four project sites, we developed a comprehensive staff development program. We think the following topics are necessary to reinforce the foundation of education.

Topics EDTC has determined to be of utmost importance

1. The Need for Restructuring

   This is a two-day session (12 hours) during which participants analyze current research and issues affecting the restructuring of public schools. They identify the knowledge and skills the workplaces of today and tomorrow will require and translate those into specific instructional topics. Participants also learn the fundamental principles of integrating academic and vocational education and examine how these apply to their own school system.

2. Outcome-Based Education

   The traditional model of education in Texas is *time driven* (students must learn essential elements in two semesters) with expectations that only some students can learn/be successful. The Bell curve is used to prescribe rather than describe. Arbitrary numbers are given magical qualities; students take a test, teachers average the grades, students with 70 or above pass, and all those below 70 fail.

The outcome-based education model is *success driven*. It assumes all students can learn if given enough time. So what if one student can learn Algebra I in one semester and another needs four semesters to learn it?

The expectation is that given enough time and appropriate methods of instruction, all students learn. There can be excellence for all.

Outcome-based education operates on four principles:

a. Expanded opportunity and support for learning success.

b. High expectations for all to succeed

c. Clarity of focus on outcomes

d. Design down from outcomes

These principles of outcome-based education will insure expanded opportunity and support for learning success of all students.

3. Team Building and Site-Based Management

These two topics can be built into a one-day staff development program.

Industry long ago realized that effective teams must go through a "bonding" process. If the integration team is going to reach maximum results, this team building process is necessary.

Site-based management is mandated for implementation in all Texas school districts for the 1992-93 school year. District Site-based management plans must be submitted to the Texas Education Agency by September 1, 1992, for approval by the Commissioner. Most administrators have been through site-based management training, but most teachers have not. Site-based management is a necessary component of any restructuring program to insure that new initiatives meet the students' needs. Teachers must be involved in making these changes; their professional opinion is a necessity for "shared decision-making."

4. Creating Partnerships; Community, Business and Industry, and Parents—"The Role You Play in the Future"

Partnerships are vital for our new restructuring efforts. Educators, business/industry, and parents must join hands in changing our current educational system. Each segment of the integration effort must experience and plan roles for this cooperative educational effort.

5. Shadowing

Shadowing is the process of watching a person at their normal job duties and procedures. Barriers exist between vocational and academic teachers. They usually do not know *what* or *how* one another teaches. Many vocational teachers have not been in a high school academic classroom since they graduated. Many academic teachers have *never* been in a vocational classroom. Many of both groups have not been in the business world for many years. Some have *never* been there.

These situations indicate a need for real understanding of one another's roles and needs. We recommend a minimum of two days be set aside for vocational teachers to shadow academic teachers and vice versa, and for both to shadow in local business and industry. For even more impact, have parents and local business and industry representatives shadow in the high school classrooms.

6. Total Quality Management

The concept of total quality management (TQM) offers school leaders a systemic approach to improving schools.

Dr. W. Edwards Deming, the originator of TQM, who is credited with the transformation and success of Japanese industry, says managing results cannot create quality. The results have already happened. To improve outcomes, you have to improve the processes that give you those outcomes.

This is exactly what we are trying to do with our education system. We are trying to improve the process of education through integrating academic and vocational education.

TQM training can help teachers and administrators focus on process.

7. Learning Styles (Overview and Specific Subject Areas)

When John Goodlad, author of *A Place Called School*, went into public schools all over the nation to do research, he discovered that 85% of all teaching in the high schools is done through lecturing. Ironically, only a small percentage of students are auditory learners. Many are visual learners, and many are kinesthetic learners. If students learn in different ways and under different physical conditions, shouldn't teachers teach in various ways?

Learning styles training will explain individual learning differences and show teachers ways to manipulate classroom conditions and teaching methods so all students have a better chance for success.

A minimum of 2 - 4 days of learning styles training is necessary for effective results.

8. Authentic Assessment and Follow-up

When we decide to integrate the curriculum, we also decide to change our teaching methods. We must use more hands-on learning strategies and practical applications. When we make these major changes in our teaching strategies, we must also make major changes in our assessment (grading) strategies. If we are going to have authentic learning to prepare students for employment in tomorrow's world, we must also have authentic assessment--paper and pen, multiple choice tests alone will no longer serve. A one day session on authentic assessment will give teachers ideas for new methods of assessment.

9. Cooperative Learning (Overview and Specific Strategies)

Cooperative learning is an integral part of the idea of success for all students. Cooperative learning, when done correctly, can be a means of emphasizing thinking skills and increasing higher-order learning. It can be an alternative to ability grouping, remediation, or special education. It can be a way to prepare students for the social skills needed in the work force in the 21st century. It can also produce an efficient, exciting classroom where learning and student achievement can flourish and result in more lively, involved learning of students.

The overview of this important area will take a full day, and several days should be devoted to specific strategies. Successful cooperative learning requires a series of short informative teacher training sessions, and after each session teachers must go back into the classroom to practice the methods and techniques over and over until they feel comfortable and successful in using them.

There are many misconceptions about cooperative learning. It is NOT just working in groups, and it is NOT meant to replace sound classroom management skills. It IS a program that can encourage students to discuss, debate, disagree, and ultimately teach one another. If these results are to be achieved, the teachers must learn methods of structuring and planning, and they must learn techniques to increase individual accountability.

10. Strategic Planning

It is imperative that the entire focus group thoroughly discuss the project, listen to everyone's professional concerns, feelings, and wishes, and come to a consensus about the vision for education in your system. The next steps are to identify a clear mission and direction and chart a course. Thorough and strategic planning is essential to any type of educational reform.

11. Competency-Based Education and DACUM Training

One day may be devoted to these topics. The highly acclaimed SCANS Report is the basis for competency- based education. Competency-based education is a three-step process. 1) Before competency-based instruction can occur, teachers or administrators must identify, verify, and make public in advance of instruction the competencies needed to be successful in a course or in a job. These are the course objectives. 2) The teacher must instruct the students so they are able to master those competencies (objectives). 3) The teacher must assess how well the students can demonstrate mastery of those competencies (objectives). Both the learner and the teacher are held accountable for mastery.

DACUM (Developing a Curriculum) is a proven process for designing a program of study. Strategies addressed in this process will be invaluable to secondary and postsecondary educators and business and industry representatives as they form the partnerships needed for successful tech prep implementation, sustainment, and accountability. DACUM requires one day of teacher training.

12. The Counselor's Role in Restructuring

Counselors are key players in the integration process. They counsel and advise students every day about course selection and career choice. It is of utmost importance that they be kept up-to-date about jobs in the 21st century and educational requirements for those jobs. They must be aware of current information and programs for career counseling. They need to be involved in all phases of the integration project so they will have first hand information about what is being taught in the integrated classrooms and how it is being taught, because they are the ones who advise students what classes to take.

13. Supervised Activity and Lesson Plan Writing

Participants will probably need two days of supervised writing and additional days without supervision. Lesson plans for integrated classes are different from normal lesson plans. They must include applications for real-world, relevant learning. Objectives and teaching assessment methods will reflect those applications. Teachers will need instruction and direction in learning how to write lesson plans that will lead to effective teaching and learning in the integrated classroom.

Additional staff development topics you might want to consider.

1. Integrated Academics
2. Apprenticeship
3. Career Pathways/Coherent Sequencing/ Development of Graduation Plans
4. Communication Skills Needed in Business and Industry
5. Decision Making Skills
6. Developing Basic Skills
7. Developing Employee Skills
8. Empowerment
9. Higher Level Thinking Skills
10. Mastery Learning
11. Mentoring
12. Peer Coaching

13. Self-Directed Work Environment

14. Teaching of Life Skills

- Selection of integration model

It is of utmost importance that each school selects a model that fits its unique school and community problems, situation, and composition. As has been emphasized earlier, no one model of integration is suitable for all schools.

Dr. Norton Grubb of The University of California in Berkeley has identified eight models of integration. These models and a short description of each will follow.

You may want to select one of these models, take "bits and pieces" from each to devise your own model, or contrive a model of your own.

Model 1: Incorporating academic competencies into vocational courses

a. Probably simplest form of integration.

b. Relabeling of the informal reinforcement of basic academic competencies.

d. Academic competencies stressed are generally simple or lower level.

e. Does nothing to change the separation between academic and vocational teachers, program and students.

f. Taught by vocational teachers.

Model 2: Combining academic and vocational teachers

a. Academic teachers initiate the teaching of academic competencies in vocational programs.

b. Assigning academic teachers to part or full time work with vocational teacher or team teaching.

c. Strength of this model is in collaboration.

d. Presence of academic teacher gives status to academic skills.

e. Most academic content is remedial.

Model 3: Making academic curriculum more vocationally relevant

a. Academic teachers incorporate vocational examples into their courses.

b. Somewhat like the "careered" movement.

c. More common approach is to introduce specific new courses "applied academics".

d. Sometimes used to substitute for lower level academic courses.

e. Used as electives with no course dropped from the course offerings.

f. Most popular form of integration.

g. Unless linked to vocational programs and teachers, true integration may not take place.

Model 4: Modifying academic and vocational education - curriculum "alignment:

a. Changes the content of both academic and vocational courses.

b. Coordinate existing teachers and course.

c. Relies on locally developed curricula or modified "off-the-shelf" curricula.

d. Incorporates elements from Models 2 and 3.

e. Many teachers use Applied Academic materials.

f. Teacher collaboration and student mixing.

g. Cooperative learning.

Model 5: Academy model

a. Operate as schools within schools.

b. Teacher collaboration.

c. Student groups work within teacher groups.

d. Business, industry relationships.

e. Motivate potential dropouts.

f. Does not reduce tracking of students.

Model 6: Replacing conventional departments with occupational clusters

a. Replace conventional departments.

b. Departments organized along occupational lines.

c. Career-cluster departments recommends specific course sequence.

d. Promotes teacher collaboration.

e. Reduces "turfism".

f. Expanded Academy Model.

g. Reduces tracking of students.

Model 7: Single-occupation high schools

a. Similar to academies except occupational emphasis is school-wide.

b. Academic instruction is more vocational.

c. Reduces student tracking.

d. Promotes opportunities for teacher collaboration.

Model 8: Electing career paths or occupational majors

a. Use occupational cluster as in Model 6 but still have conventional departments.

b. Students elect a "career path" to follow.

c. Integrate career-related information into academic subjects.

d. Reduces "curriculum cafeteria" approach.

Adapted from *"Integrated Curriculum and Performance-Based Education: A Strategy for Systemic Change"* by Jerry D. Pepple, University of Illinois.

■ Selection of instructional model

1. Integrated activities may be delivered within existing courses by making innovative curriculum and scheduling arrangements:

   - One-on-one communication and cooperation between an academic and a vocational/technology teacher.
     EX: An academic course of math, science, or English in which "hands-on" activities would be incorporated into the regular curriculum to show practical applications of the academic concepts.

   - Agreement between all or most of staff to deal with some aspect of a theme or topic for a brief period of time.
     EX: Cultural Heritage, Life in the U.S. During the Roaring 20's, Ecology, Political Awareness, etc. A theme may be selected for each month, 6-weeks, or year.

   - Arrangement between teachers of several different subjects who are assigned one group of students and encouraged to correlate teaching methods, terminology, and subject matter.
     EX: Teachers of English, social studies, and science could organize instruction around a series of themes such as Self-Esteem, Change, or Cultural Heritage.

   - Arrangement of a block of time of two to four hours by a vocational and an academic teacher in which to teach the two subjects cooperatively.
     EX: Teach both English and cosmetology during a four-hour block of time; teach both biology and agriculture during a two-hour block; teach both math and auto mechanics during a three-hour block. Teachers must come to agreement about scheduling and curriculum arrangements.

   - Structuring for an entire school system to be arranged into career pathways
     EX: Career clusters (total of four to eight; the number will vary depending upon the size of the high school) are determined and beginning in the ninth grade, all students choose their career cluster. All academic courses within that cluster are taught with terminology and applications relevant to the chosen cluster.

2. New courses may be formed to deliver integrated instruction. These new courses are often called "applied" courses (Applied Algebra, Applied Communications, etc). The key is to identify appropriate content and designate teachers to plan and deliver the content. It may be taught through any of the above methods. Many complete applied courses are available for purchase. **Currently, TEA does not accept these courses for academic credit.**

- Selection of students/criteria for the courses/program

  When we use the SCANS Report as a basis for restructuring the school systems, we must remember that cooperative learning in school is preparation for job success in the future. To be a successful employee, we must learn to work cooperatively with fellow employees. Therefore, a successfully integrated course should have open entry and homogeneous grouping. There should be no basic classes and no accelerated classes. Even though special education students are currently exempt from certain state mandates, they will not be exempt from the trials and tribulations of life and the world of work! Success for all through cooperative learning, hands-on applications, and careful monitoring by the teacher is the goal of an integrated classroom.

- Select scheduling/time frame adjustments

  Most scheduling adjustments will depend on what integration and instructional models you select. Block scheduling is very useful for integrated teaching because it allows more time for projects and activities.

  Common teacher conference periods and lunches are almost a necessity for planning and preparation. There must be weekly planning sessions where teachers can get together for planning, discussing, and studying.

  It is of utmost importance that the person in charge of scheduling be totally committed to the integration project and its success!

- Establish the role for career development/ guidance

  Because the entire process of integrating academic and vocational education is based on site-based management and outcome-based education, and both site-based management and outcome-based education are based on information from the SCANS Report which explicitly lists employee skills needed for success in the 21st century, it is imperative that career guidance be part of the integration process. We know that high school students in Texas are exposed to very little career information. We also know that "the forgotten half" is prepared for unemployment when they graduate from high school. Integration with an extensive career development and guidance program can help to alleviate these problems.

- Determine roles and activities for insuring support and involvement from all participants.

  To insure support and involvement from all participants and avoid overlaps, it is necessary to designate assignments and responsibilities for each team member. It is important to allow time for participants to meet to discuss these roles. Remember, business/industry and parental involvement are important for successful restructuring.

- Determine evaluation/ assessment procedures

  Student achievement should be the ultimate goal of all restructuring efforts. It is possible to evaluate student achievement or gain through the administration of pre and post-tests. Student achievement and gain can also be measured through observations, assessments, and surveys of: 1) student attitude changes, 2) student performance, 3) teacher satisfaction with the program, and 4) public satisfaction with the program (parents, business, and industry, etc).

  It is our opinion that a complete and accurate evaluation can only be made after the integration program has been actively implemented for three to five years.

- Determine expansion of integration concepts for the future

  After successful implementation of integrated learning, it is imperative to expand the concept. Expansion may be to other disciplines and to the district level and to other districts.

  Word of mouth is probably the easiest and most effective method of integration expansion. Student success is exciting, and excitement is contagious. If the project is truly successful, students will talk about the new projects and activities in the classroom, and teachers and administrators will talk about the enthusiasm and success of students. Other teachers, administrators, and parents will be curious about the innovations and, hopefully, want to become involved.

  The news media can be an effective source of expansion. Newspaper features and articles, and local radio and television features, commentaries, and talk shows about student achievement can quickly arouse community interest. Students talking about new and unique learning experiences in the classroom suggest successful curricula integration.

Other methods for advertising the program could include billboards, bulletin boards, informational brochures, letters to parents/guardians, informational meetings, and flyers.

It is important that local policy makers (legislators, state board members, and local board members) be notified of the new levels of student interest and achievement.

- Determine funding sources for restructuring

When we talk of educational reform, many people assume there is a positive correlation between the amount of money funneled into a program and the eventual success of the program; however, studies have shown that project scope and administrative support have a greater influence on programs than does money. Still, money is essential.

The largest expenditure for successfully integrated programs will be for staff development and the necessary substitute teachers. If the reform effort is to be successful, quality staff development, on appropriate topics, is a necessity. This training will take one to three years--then the major expense of integration is over.

Carl Perkins funds may be used for staff development presentations and for substitute salaries to develop "a coherent sequence of courses so that students achieve both academic and vocational competencies." To receive this money, administrators must articulate plans for integration.

The SCANS report has caught the attention of business and industry as well as educators. Many business people and corporations are now seeing that the quality of the public education system has a direct effect on their business. Large corporations are realizing their money may be used more effectively in the public schools than in remediation of basic skills of employees. The resource section of this book lists programs that are currently funded by business and industry.

- Write the three-year integration plan

After all the planning has been done it's imperative to write it all down in a concise manner. This is the blueprint for an integration plan. Just as construction blueprints may often call for changes, modifications and adjustments, so may this plan. Trial and error is important in successful integration of academic and vocational education.

Three-Year Plan

Model for Integration of Academic and Vocational Curriculum

Austin Independent School District
Austin, Texas

Part I
Narrative Description of Integration Plan

A. **Courses to be integrated. Please include rationale for courses selected.**

The goal of this plan is to integrate ALL academic and vocational curricula. During the first year of implementation, AISD's model for integration will focus on seven curriculum areas; the core academic subjects of English/language arts, mathematics, science, and social studies (economics) and the vocational areas of office occupations (microcomputer applications), technology education (principles of technology), and trade and industrial education (industrial electronics). Additional academic and vocational courses will be integrated during years two and three. (See the attached action plan for a detailed schedule.)

The district is currently working to establish a tech prep system with emphasis on electronics and office occupations. Many students lack the core competencies. It is believed that an integrated curriculum will give all subjects greater relevance, thereby enabling students to be more successful and improve their overall achievement.

B. **Instructional strategies to be used to deliver instruction. Please include an explanation of any adjustments in scheduling that will be required.**

A variety of instructional strategies will be used to deliver integrated instruction under this plan. Included are: competency-based instruction, cooperative learning, demonstration, interdisciplinary teaching, outcome-based education, peer tutoring, recorded reading, scientific experimentation, self-directed study (i.e. senior project) study tours to business and industry sites, team teaching, research, and resource speakers.

It is proposed that one day per week, a facilitator will be assigned to work with students while designated teachers coordinate integrated curriculum activities. Students in identified teachers' classes will meet in the theater for resource speaker presentations. Employability skills will be among the primary topics addressed by the speakers to provide common understandings for developing hands-on/applications-based learning experiences.

Multistrand day and/or year-long calendars should enhance the integration implementation process by providing more flexibility as other schedule adjustments may be necessary in order to facilitate common planning periods for participating teachers. As the process progresses, decisions will be made regarding changes of this nature.

C. **Staff development requirements—please include topics selected and rationale.**

A number of staff development topics are included in the implementation plan. Suggested topics are: competency-based instruction, content mastery, cooperative learning, interdisciplinary teaching, learning styles, outcome-based education, quality schools, recorded reading, team-building, and team-teaching. Other specialized trend-related topics such as SCANS, Tech Prep, America 2000, etc. should also be addressed. These topics were selected because of teacher interest and the natural support of integration these concepts promote.

D. **Approximate number of students to be involved in implementation phase. How were students selected for participation?**

It is estimated that there will be approximately 500 to 1,000 students enrolled in English/language arts, mathematics, science, social studies (economics), office occupations (microcomputer applications), technology education (principles of Technology) and trade and industrial education (industrial electronics) will be involved during the first year of implementation. These students were selected on the basis of their being enrolled in the classes of participating focus team members. In years two and three, the numbers will increase as more academic teachers and vocational program areas become involved in integration efforts.

E. **Role of focus group—please describe procedure used to develop your district's integration plan.**

Focus group members were actively involved in the development of the district's integration plan. The focus group was comprised of a team of campus level personnel as well as an external team of parents, business and industry representatives, and others.

Members of the campus focus team meet frequently in order to fulfill the requirements of the project (i.e. staff development, lesson plans, site visitations, etc.) The external focus team members met less often, but were oriented to the integration concept, familiarized with eight national models for integration, and given the opportunity to meet with the campus focus team to exchange ideas and discuss common essential elements. A variety of resources was used in this process. Together, the two teams identified and validated characteristics of eight national models which they wanted in the AISD model.

One meeting of the campus focus team was set aside for drafting a preliminary model of the integration plan. This plan was then reviewed and modified by the external focus team. When consensus was reached, all focus groups members were asked to sign off on the plan.

F. **Resources used to develop plan.**

In October, the campus focus team participated in a two-day orientation session sponsored by the Educational Development and Training Center at East Texas State University. There they developed team-building skills, reviewed interdisciplinary curriculum materials, listened to speakers discuss eight national models for integration and learning styles, and participated in activities which helped them to collaboratively plan for integrated instruction.

After that campus focus team members completed a series of shadowing experiences in academic and vocational classrooms and industry. Professional readings and other forms of information-sharing have enabled them to become familiar with integration activities around the country.

In December, campus team members visited the health careers and business careers high schools in San Antonio for first-hand looks at integrated instruction. Time was also dedicated to the review and identification of essential elements which are common in selected curriculum areas. Sample lesson plans were reviewed and others developed as a result of these experiences.

Site visitations to other locales provided insight into integration models in practice elsewhere. Additional staff development was conducted on such topics as outcome-based education, learning styles, and cooperative learning.

Other resources used to develop AISD's integration plan include materials from the 1990-91 statewide integration workshop sponsored by Texas A & M University and readings from Glasser's *Quality Schools* and other periodicals.

G. **Description of the role of career development/guidance process to be used in project.**

As a result of a 1991 budget crisis, vocational counselors are no longer funded in AISD. The responsibility for career guidance and counseling now rests with each high school campus counseling staff. Staff development efforts are currently underway to familiarize all secondary counselors with TEA's new Career Development Guidance Model. Bowie High School counselors will participate in TEA-sponsored Career Development Counselor Institutes to provide additional support for vocational education and the integration process.

As a result of the Carl. D. Perkins Vocational and Applied Technology Education Act funding, all eighth grade students will receive vocational assessments. Results will be reviewed with students and parents. This spring, every eighth grader will also receive a copy of *Getting There,* an AISD publication to aid in the development of four-year plans. Efforts are underway to broaden the offering of Career Investigation at all middle/junior high schools.

H. **Role of business, industry and the community in preparing the plan.**

Business, industry, and community representatives have been involved with the focus team since early-on in the project. Because integration more directly affects campus staff, it is believed that campus focus team members should be responsible for the initial development of the integration plan. The business, industry and parent members of the focus team will review the urban integration model and make recommendations for change before it is finalized.

I. **Evaluation procedures to be used to assess impact of project on student achievement.**

Evaluation plans include a review of student participants' scholastic achievement, attendance, attitudes, and failure rates to assess the impact of this project on student achievement. Business, industry, and parent representatives will also review the teacher-developed integrated lesson plans and make recommendations for revision and further development.

Part II
Action Plan for Integration of Vocational and Academic Education

Implementation Strategy	Activities/ Costs 1992-93	Activities/ Costs 1993-94	Activities/ Costs 1994-95	Persons Responsible	Potential Problems
Increase awareness of the implications of integration of vocational/academic education					
Activities					
Develop orientation materials for these audiences * Campus staff * Counselors (feeder patterns) * Students * Other school staff (feeder patterns) * Parents * Community members	XX 3 day substitute pay (3x8x48.44) $1,200			Focus Team Members	* Fear of change * Time available * Lack of administrative support * Image of Vocational Education * Unrealistic expectations of parents * Teacher time away from classroom * Inflexibility of staff and/or administration * Availability of funds * Availability of integrated materials
Present orientation information to identified audiences	XX	XX	XX	Focus Team Members	
Develop public relations materials * Question/answer document on integration * Press releases * Interview shows on AISD TV channel * Presentations for community groups/organizations * Brochures * Video/slide tape	XX 3 day substitute pay (3x8x48.44) $1,200; printing $2,000; video $5,000	XX		Focus Team Members	

Legend—XX Indicates activity will occur during the year indicated

Action Plan for Integration of Vocational and Academic Education

Implementation Strategy	Activities/ Costs 1992-93	Activities/ Costs 1993-94	Activities/ Costs 1994-95	Persons Responsible	Potential Problems
Acquire knowledge for successful integration techniques					
Activities					
Review instructional materials across content areas	XX ½ day substitute pay (½x50x48.44) $1,211	XX ½ day substitute pay (½x50x48.44) $1,211	XX ½ day substitute pay (½x50x48.44) $1,211	Campus Principal	• Fear of change • Time available • Lack of administrative support • Image of Vocational Education • Unrealistic expectations of parents • Teacher time away from classroom • Inflexibility of staff and/or administration • Availability of funds • Availability of integrated materials
Establish mentor relationships with teachers beginning integration work	XX	XX	XX	Campus Principal	
Provide shadowing experiences for teachers	XX 3 day substitute pay (3x50x48.44) $7,266	XX 3 day substitute pay (3x50x48.44) $7,266	XX 3 day substitute pay (3x50x48.44) $7,266	Campus Principal	
Provide opportunities for professional reading on integration of academic and vocational education	XX	XX	XX	Campus Principal with support of Vocational Staff	
Increase understanding of concepts related to integration of academic and vocational education • SCANS • Tech Prep • America 2000 • Others as identified	XX consultants $2,000	XX consultants $2,000	XX consultants $2,000	Campus Principal with support of Vocational Staff	
Review available research on integration of academic and vocational education	XX	XX	XX	Participating Teachers	

Action Plan for Integration of Vocational and Academic Education

Implementation Strategy	Activities/ Costs 1992-93	Activities/ Costs 1993-94	Activities/ Costs 1994-95	Persons Responsible	Potential Problems
Enrich the curriculum with integration activities					
Activities					
Develop additional lessons which integrate vocational and academic education	5 day substitute pay (5x50x48.44) $13,000	5 day substitute pay (5x50x48.44) $13,000	5 day substitute pay (5x50x48.44) $13,000	Focus Team Members and other Participating Teachers	* Fear of change * Time available * Lack of administrative support * Image of Vocational Education * Unrealistic expectations of parents * Teacher time away from classroom * Inflexibility of staff and/or administration * Availability of funds * Availability of integrated materials
* Agriculture Science and Technology	XX	XX	XX		
* Business Education	XX	XX	XX		
* English/Language Arts	XX	XX	XX		
* Health Education	XX	XX	XX		
* Home Economics Education	XX	XX	XX		
* Marketing Education	XX	XX	XX		
* Mathematics	XX	XX	XX		
* Office Education	XX	XX	XX		
* Science	XX	XX	XX		
* Social Studies	XX	XX	XX		
* Technology Education	XX	XX	XX		
* Trade and Industrial Education	XX	XX	XX		
Develop employee skills units	XX			Focus Team Members	
* Quality of work	3 day substitute pay (3x8x48.44) $1,200				
* Self-directed work environment					
* Empowerment					
* Communication skills					
* Critical thinking					
* Decision-making skills					

Action Plan for Integration of Vocational and Academic Education

Implementation Strategy	Activities/ Costs 1992-93	Activities/ Costs 1993-94	Activities/ Costs 1994-95	Persons Responsible	Potential Problems
Identify and develop teacher competency in a variety of delivery techniques **Activities**					
Provide continuing staff development in the following delivery techniques: • Competency Based Instruction • Content Mastery • Cooperative Learning • Interdisciplinary Teaching • Learning Styles • Outcome Based Education • Recorded Reading • Team Teaching • Others as identified	XX consultants and materials $10,000	XX consultants and materials $10,000	XX consultants and materials $10,000	Campus Principal with support of Vocational Staff	• Fear of change • Time available • Lack of administrative support • Image of Vocational Education • Unrealistic expectations of parents • Teacher time away from classroom • Inflexibility of staff and/or administration • Availability of funds • Availability of integrated materials
Provide opportunities for site visits to observe various integration delivery techniques	XX travel/per diem) $5,000	XX travel/per diem) $5,000	XX travel/per diem) $5,000	Campus Principal with support of Vocational Staff	

Action Plan for Integration of Vocational and Academic Education

Implementation Strategy	Activities/ Costs 1992-93	Activities/ Costs 1993-94	Activities/ Costs 1994-95	Persons Responsible	Potential Problems
Evaluate the effects of implementation of vocational/academic integration					
Activities					
Review the following: * Student achievement * Student attendance * Student attitude * Failure rates	XX	XX	XX	Teachers/Counselors Administrators	* Fear of change * Time available * Lack of administrative support * Image of Vocational Education * Unrealistic expectations of parents * Teacher time away from classroom * Inflexibility of staff and/or administration * Availability of funds * Availability of integrated materials
Record anecdotal information on the positive and negative reactions of students/staff	XX	XX	XX	Teachers/Counselors	
Review this plan yearly to determine if planned activities are completed/successful	XX	XX	XX	Focus Team Members	
Refine plans as needed	XX	XX	XX	Focus Team Members	

Part III
Focus Team Approval

We, the members of the AISD Focus Team, reviewed the District's Plan for Integrating Academic and Vocational Education. Recommendations for revision were made accordingly and we hereby approve this plan.

Cheryl Bingham

Cheryl Bingham
Business/Industry Representative
Training Manager, Hart Graphics

Ben Botbol

Ben Botbol
Technology Education Instructor
Bowie High School

Jim Chapman
Science (Physics) Instructor
Bowie High School

Denise Cochran

Denise Cochran
Office Education Instructor
Bowie High School

Kent Ewing
Principal
Bowie High School

Billie Franke

Billie Franke
Instructional Coordinator
AISD

W. David Hill
Assistant Superintendent for
Secondary Education
AISD

Barbara Huffman

Barbara Huffman
Guidance Counselor
Bowie High School

Margaret Lindsey

Margaret Lindsey
Administrative Supervisor for
Vocational Education
AISD

Lloy Lizcano
Mathematics Instructor
Bowie High School

Margaret McQuistion

Margaret McQuistion
English/Language Arts Instructor
Bowie High School

Zenobia Orimoloye

Zenobia Orimoloye
Business/Industry Representative
Internal Revenue Service

Eric Paul
Business/Industry Representative
Motorola

Ruth Riding

Ruth Riding
Social Studies (Economics) Instructor
Bowie High School

Glenda R. Ross

Glenda Ross
Parent
Bowie High School

Glenda Stover

Glenda Stover
At-risk Coordinator
AISD

Richard Sunbury

Richard Sunbury
Industrial Electronics Instructor
Bowie High School

Al Suttles
Vocational Administrator
AISD

D Swanson

Dennis Swanson
Instructional Coordinator
AISD

Robert J Tracy

Bob Tracy
Business/Industry Representative
3-M Telecom Company

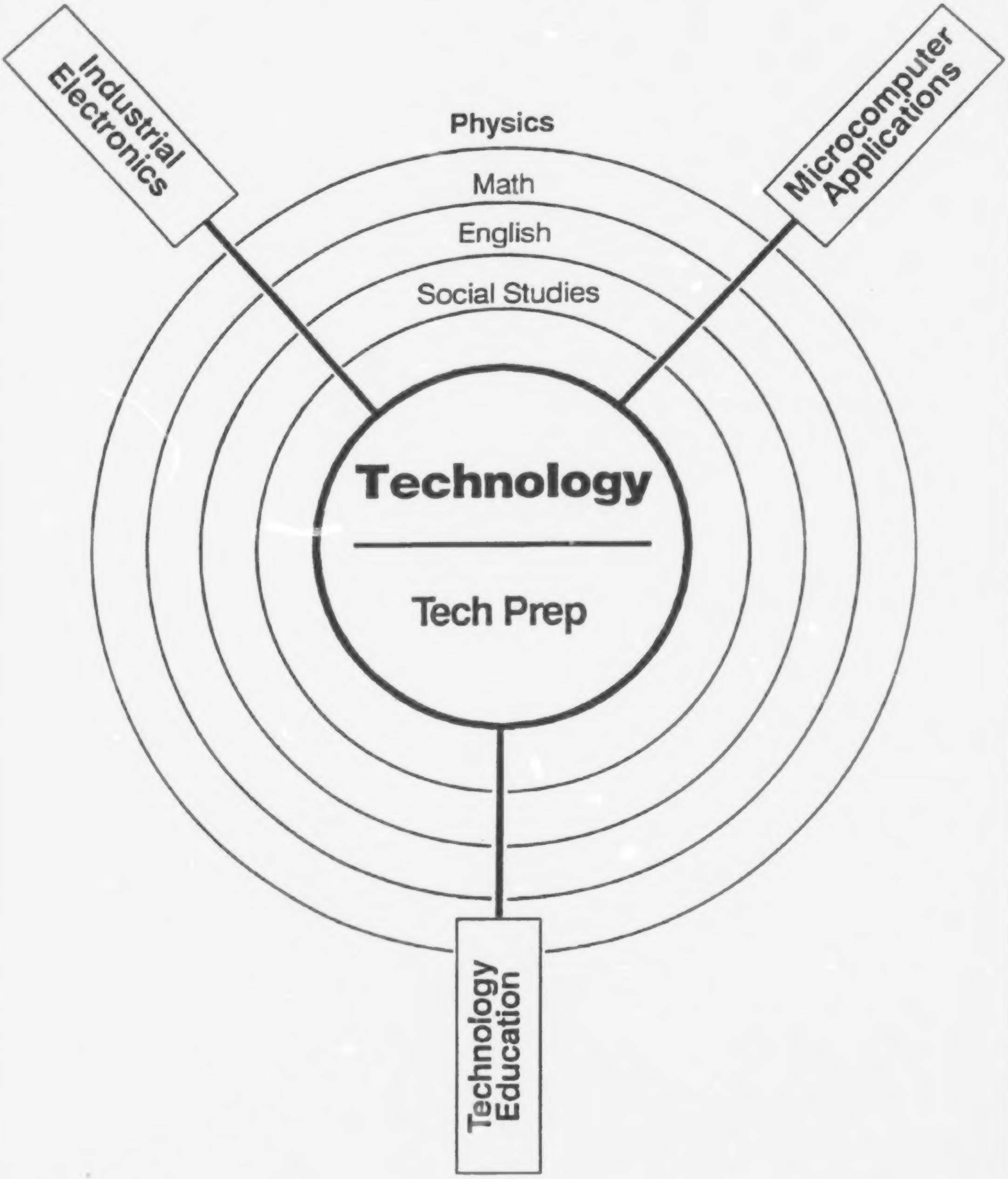
Mel Waxler

Mel Waxler
Business/Industry Representative
(Chairman, School-to-Work
Transition Sub-committee
Greater Austin Chamber of
Commerce

Debbie Wiley

Debbie Wiley
Office Education Instructor
Bowie High School

Multiple Employment Opportunities as Focus


Industrial Electronics
Microcomputer Applications
Physics
Math
English
Social Studies
Technology
Tech Prep
Technology Education

Three-Year Integration Plan

Model for Integration of Academic and Vocational Curriculum

Greenville Independent School District
Greenville, Texas

Greenville Independent School District
Three-Year Integration plan

Greenville High School (GHS) is currently working on a project involving the integration of selected academic and vocational courses. To better serve the entire student body, faculty and students need to understand the relevance of technology in their academic planning. Statistics indicate that approximately 85% of America's entering workforce will neither have nor need a college degree. Thus, the high school academic and vocational curricula should become better integrated so students become aware that the basics of academics— mathematics, science, and English— do not stand alone. Rather, they are truly part of vocational courses and integral components of daily life.

Six courses have been chosen for this integration project. English, mathematics, and science are the three core courses that are required of all high school students. Freshmen should be led to understand the need for these courses in their daily lives in order to make their learning experiences more meaningful and rewarding. This is the time to help them answer the question, "How will I use this later in life?" Three vocational courses that have clear connections to these academic courses have been chosen for this project— technical systems, home economics, and auto mechanics. Through the integration of these six courses, students should begin to understand how academics apply to life skills and how vocational courses can help them develop control over their daily lives. Integration of these courses can also lead to meeting needs of the job market and society as a whole.

To accomplish the project objective, a plan has been designed to provide an elective course for 90 selected 9th grade students. It will involve one class period a day where these 90 students will be divided into six equal groups. For a six-weeks period, they will study one of the following subjects: English, home economics, mathematics, technical systems, science, and auto mechanics. They will then rotate to the next class. This career development concept will help them become aware of the relationship between academic and vocational education. Because of the cluster arrangement with all groups in the same one class period, field trips, speakers, and other enrichment activities can be easily scheduled for the entire group. Teachers involved in these classes will use tactile and kinesthetic approaches in their instruction. Verbal skills will be stressed in each area, and a year-long project with a written paper demonstrating coordination among all six cluster classes will be required of all students. Freshmen especially need nurturing. To provide such nurturing, the first six-weeks teacher/class pairing will place emphasis on their becoming "one" for the entire year with periodic meetings, field trip supervision, counseling sessions, etc. It is hoped that all teachers and students will become close, but this first six-weeks pairing will be stressed to give these 90 freshmen a home base.

Staff development for the teachers involved in this project is important. But, staff development for all teachers at GHS to orient them to the project and to make future

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academic vocational integration successful is essential. To achieve both of these goals, the following sessions are recommended:

A. an orientation for the entire GHS administrative and faculty staff;

B. a program designed to explain various student learning styles and techniques to fit them;

C. a program presented by various representatives from industry (local and more global) explaining the strengths and weaknesses of current high school graduates; and

D. a session showing the relevancy of today's and tomorrow's technology to our students' futures and how the high school curriculum can enable our students to be successful.

During the implementation phase of this project, it is anticipated that 90 students will be involved during the 1992-93 academic year. Students will be given an orientation to the proposed class during their 8th grade year (February, 1992) by a high school counselor who is a member of this project team. The class will be listed in the course offering catalogue that each 8th grade student will take home. The students and their parents will made application for this course on their course choice sheets. Because this course, Academic Technical Discoveries 906 (ATD 906), will require students to be proficient in several skills, those who take this course will need to have minimal reading scores of 30% and minimum mathematical scores of 30% based on the Norm-referenced Assessment Program for Texas, the NAPT.

A focus group for this project has been formed to provide input concerning ways to improve the coordination of academic and vocational programs at GHS. Needs of business and industry in the local community as well as more global needs were highlighted, and the role of the focus group was to assist in the development of an integration plan for GHS.

Meetings were held by the project team, which consists of four academic teachers, four vocational teachers, one counselor, the high school principal, the vocational coordinator, and the assistant superintendent for curriculum. After orientation to the goals of this project by Educational Development & Training Center personnel, a series of meetings involving brainstorming, discussion, study sessions, etc. were held. Following a few false starts, the integration plan developed into the classroom situation (ATD 906) described above which integrates several academic/vocational areas. Subsequent to the development of a plan, another meeting was held for all members of the focus group. At this meeting, the plan was presented and all attending were given an opportunity for additional input. At this point, the focus group indicated approval and the integration project team members were instructed to begin planning for the 1992-93 academic year.

The individuals involved in developing the integration plan utilized many resources. They attended a workshop in Austin, Texas, there they heard speakers from industry and education, met with other project school teachers, and were able to study various educational resources (textbooks, audio-visual material, computer programs, etc). All members of the team "shadowed" teachers from outside their area. For example, the vocational teachers saw the academic teachers at work and vice-versa. These "shadowing" days allowed the teachers to see ways that integrations could and should occur. Additional time was spent in informal meetings, study/in-service sessions, and focus group meetings where input was received from local community leaders. Individual team members read various professional journals, attended a workshop on learning styles, and brainstormed with one another to develop an integration plan for GHS.

The role of the guidance/counseling department will be one of consultant during the planning stages, implementation during the scheduling process, and troubleshooting during the actual school year. The counselors will inform the 8th grade students about the course at orientation. The checking of the reading and math scores to determine the qualifications of a student will be done in the counseling department. A final list of students to be accepted into the course will then be sent to the teachers for further input.

Greenville is located in northeast Texas, approximately 55 miles from Dallas. Its population is about 24,000 and it is the county seat of Hunt County. Greenville enjoys a diverse industrial and business base. Additionally, Greenville Independent School District (GISD) also enjoys a close working relationship with many industries and businesses in the community. During the planning stage for this project, input was solicited from individuals representing two major industries, local businesses that are parts of major chain stores, and local private businesses. Input was also solicited from parents of both academic and vocational students. Representatives from GISD's administration and school board met with the vocational director of GHS and assisted in the initial phase of the project. All individuals contacted were positive and offered many ideas which were subsequently incorporated into the GHS integration plan. Business leaders were asked to provide input concerning the needs of the community and the qualifications of a competent workforce for their specific areas. Parents were consulted concerning relevancy of this type program and student acceptance. All such input was taken into consideration by the development team. The cluster-course concept developed from the ideas and opinions of all these individuals, and it was presented to the focus group for approval.

Student achievement will be assessed by various methods. Initially, a pre-test and post-test will be developed by the teachers from each subject area. Five questions will be submitted covering each area. The pre-test will be given each student during the first two weeks of the fall semester. The post-test will be administered as part of their spring semester examination. The current grading policies of GHS will be followed, and students will be expected to receive a minimum of two grades per week. A semester examination which will cover the material covered in three areas will be developed by the teachers. The post-test and the written report by each student covering the year-long project will be ungraded. These grades will be an ongoing assessment of student achievement. The COPP test will also be given each student to determine his/her areas of interest. The teachers involved in this project feel some method of determining student attitude toward relevancy of academic and vocational integration is needed. At this time, an instrument has not been selected, but it is anticipated one will be found prior to the spring of 1993.

Once it was determined that academic and vocational courses at GHS needed to be integrated to better serve the student population, an action plan to implement this idea was developed. Implementation of such a plan within the structure of a high school curriculum involves several phases. This action plan is an on-going process and is currently being adjusted.

To actually place the course developed by the team members into the GHS 1992-93 academic schedule, several tasks must be completed. The course must be approved by the GISD school board. The assistant superintendent of curriculum, actively involved in the planning process, presented this concept to the superintendent and to the school board at an informal study session. Superintendent Weaver was quoted in the local newspaper as saying he anticipated integration of academic and vocational courses in the upcoming school year. Once the school board gives approval for this course, the process will proceed.

The Texas Education Agency (TEA) has been contacted concerning the feasibility of obtaining an identification number for this experimental course and no obstacle appears to exist.

During the orientation process for 8th grade students, GHS counselors will give an overview of this new course— Academic Technical Discoveries (ATD). This will take place in February, 1992. After consultation with their parents, students can choose this class as one of their electives for their 9th grade year. Upon receipt of the students' selection sheets, counselors will examine their test scores and recommend placement in the course until a maximum of 90 students has been recommended. One problem that might be encountered would be too few students asking for the course to allow it to be offered. However, because of orientation by the high school counseling staff and the fact that freshmen actually need greater choice in electives than is currently offered, this problem is not expected to arise. This new course would require the release time of one period for six teachers to actually teach ATD 906. In discussions with school administrators, this does not seem to be a problem in areas outside mathematics and science. These two areas are already experiencing crowded class loads. A method of providing teachers for these two areas must be found. Scheduling this course into the class day will need to be carefully done to accommodate existing teachers, student scheduling requirements and classroom space. Additionally, once the course has been approved, teachers assigned, and classroom space identified, a budget for the 1992-93 year will need to be adopted. This budget should include funds for teaching supplies, field trips, and other enrichment activities for the proposed 90 students. The time frame for this entire project, including conceptualization, formulation, and implementation runs from October, 1991 through August, 1992. If this course is added to the curriculum, the next phase would be from August, 1992 through May, 1993.

Several teachers involved in this project have already developed lesson plans for their specific areas. Additional lesson plans are being developed. When all are completed, they will be distributed to team teachers. These will give an overview of all six areas to be taught. Coordination between teachers and the concepts to be taught is very important. While in the planning phase, the teachers listed possible course content and the cross-over between classes. The areas chosen— mathematics, auto mechanics, English, technical systems, science, and home economics— all lend themselves to such an idea. Although the lesson plans are not complete, sample concepts follow that will enable each student to see the transferability between each cluster class and understand the acceptable level of work required in each class. These include communication skills, higher level thinking skills, and decision making skills. Acquiring these skills will allow students to become self-directed and empowered for future decision making opportunities that can impact their lives in a positive manner.

Mathematics: patterns, coordinate planes, formulas, measurement, and geometry

Auto Mechanics: tire changing, preventive maintenance, electrical system, safety checks, owner's manual, and proper upkeep.

English: sequential/chronological order, basic consumer laws, decision making skills, basic written and oral communication, biographies of inventors, and reading.

Technical Systems: basic drafting skills with student-developed project and basic power systems with student-developed project.

Science: acid rain, emissions, kitchen chemistry, electromagnetic energy, and anti-freezing/boiling/freezing.

Home Economics: pattern enlargements, food preparation, geometric shapes with student-developed project, etiquette at home and the workplace, and self-esteem.

(**Note:** These are proposed ideas and may change as the lesson plans are finalized and further input received.)

For the project to be successful, it must be positively received by the school board, community, business, industry, and GHS. To promote this positive perception, plans are underway to develop a newsletter to keep everyone informed about the content of the proposed course, plan of action once the course is part of the curriculum, and student generated news beginning in the fall, 1992. In-service sessions for all high school teachers concerning the relevancy of academic and vocational integration are also being planned. The continuation of the focus group is a necessity, and its enlargement to include even more individuals from the community is planned. Leaders from local business, the industrial community, parents, and school administrators will become part of a speaker's bureau and will speak to and interact with the students taking this course. Other methods will be devised to ensure local support and will be implemented as necessary.

Focus Team Approval

We, the members of the GISD Focus Team, reviewed the District's Plan for Integrating Academic and Vocational Education. Recommendations for revision were made accordingly and we hereby approve this plan.

Jane Asberry

Jane Asberry
Home Economics

Paula Ballew

Paula Ballew
English/Journalism

Marsha Fincher

Marsha Fincher
Counselor

James Fuller

James Fuller
Principal

Ginger Lockert

Ginger Lockert
Home Economics CO-OP Teacher

Don Money

Don Money
Industrial Technology

Vanessa R. Pope

Vanessa Pope
English/Journalism

Jan Rosenbalm

Jan Rosenbalm
Math

Donna Tavener

Donna Tavener
Science

Frank Walls

Frank Walls
Auto Technology

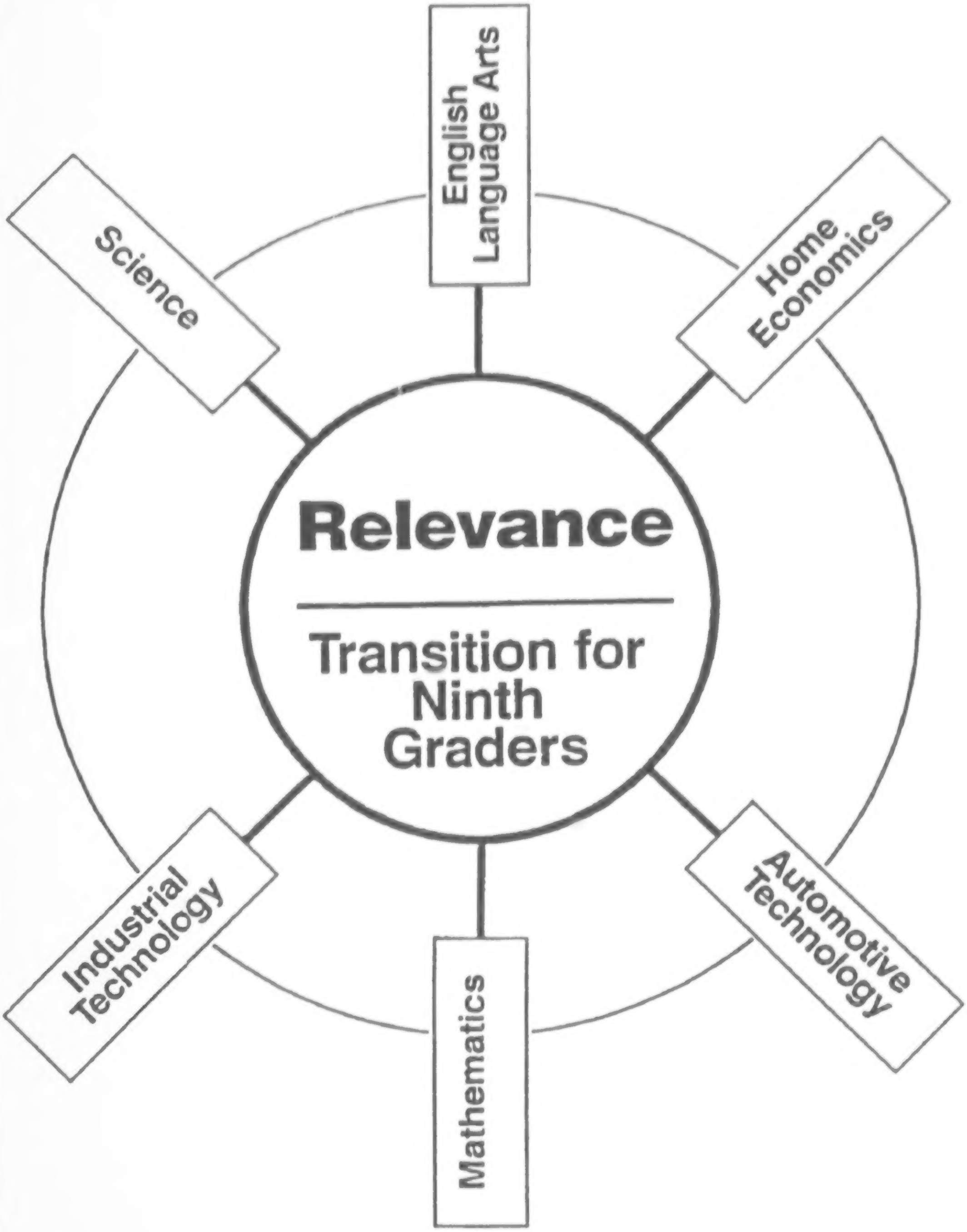
Martin Strand

Dr. Martin Strand
Vocational Director

Mike Cardwell

Mike Cardwell
Asst. Superintendent of Instruction

Common Concern/Goal as the Focus


English Language Arts
Home Economics
Science
Relevance
Transition for Ninth Graders
Industrial Technology
Mathematics
Automotive Technology

Three-Year Integration Plan

Model for Integration of Academic and Vocational Curriculum

Mansfield Independent School District
Mansfield, Texas

Mansfield Independent School District
Three-year Integration Plan

Narrative description of integration plan

A. When Mansfield ISD decided to become a part of the integration project, Algebra I was chosen to be the vehicle for integration. Several factors were considered in making this decision. First of all was the fact that many 9th grade students fail to pass the TAAS test. It was hoped that in a hands-on situation, learning would become more real, leading to more student retention and thus better success on TAAS. It was also noted that the Texas Education Agency was refusing to approve curriculum for basic math classes. Fundamentals of Math (FOM) has already been deleted from the curriculum; Pre-Algebra and Consumer Math will soon follow. This will force all students entering high school to begin their math credits with Algebra I.

In order for the population to be successful in Algebra I, the material had to be made meaningful to the student. It was hoped by connecting math to their vocational courses and thus to life skills, the reason and rationale for learning would be apparent.

After the curriculum is written and implemented for Algebra I, Mansfield ISD will begin the process again to include Geometry and Biology I, an integrated course using practical lab activities.

B. At the time we are writing this, we have not yet attended the seminar on learning styles. Many of the methods we employ may change after we attend the seminar. At this time instruction will be a combination of demonstration/lecture/lab. Students will do much of their background studies in cooperative learning groups with applications being conducted in a hands-on lab setting. The application will be directed toward skills learned in the student's vocational course.

Two classes will be created in the master schedule which will be identified as Integrated Algebra. Since the other Algebra class will be a random selection, it will be identified after formation of the classes.

C. Staff development is crucial to the integration plan. The team members, advisory members, business, industry, faculty, administrators, parents, and students must understand the purpose of the project and must be aware of the process driving all stages of development and implementation.

Staff development began early in the project with the project advisory committee (PAC) meeting in Austin in September. The MISD Integration Team attended a day and a half workshop in Austin in October, and a focus group meeting in Mansfield was held to involve local business and industry and school board members.

The integration team toured Texas Industries and LTV to learn the training required by these industries. The team is planning a 3-day staff development session to emphasize learning styles through the Center for Success in Learning in Dallas. This will be followed by 2 days of training with Texas Instruments through their Quality Improvement Workshop (QIW) to develop teaming concepts and consensus building.

All guidance counselors will attend a Career Orientation Planning Program (COPPS) in Ft. Worth and will receive more extensive and individualized orientation at a one day workshop to be held in Mansfield.

The integration team will visit Leander High School in April to observe their integration efforts and look at their Tech Prep Program.

The ideas and strategies learned will be shared with our local focus group and local administrators and faculty as time permits. The most important audience of the staff development will be the students themselves. The most noticeable effect should be a common bond and rapport among all participants in the project, since all will have undergone very intensive training and planning together through all stages of the integration project.

D. There will be approximately 60 students involved in the implementation of Integrated Algebra I. Twenty pre-algebra students with vocational ties, 20 pre-algebra students with no vocational ties, and 20 general Algebra I students will be taught using this curriculum. After the pre-algebra students are identified, the students will be picked at random for the two classes. The Integrated Algebra I class will be chosen randomly from all the students enrolling in Algebra I.

E. The focus group consists of all members of the integration team, members of the school board and community, and local business and industry representatives. They are used as a steering committee who offer recommendations and suggestions for implementation and improvement of the project.

F. The resources involved in the formation of our plan consisted of a general meeting of the focus group in September. This meeting was scheduled by Dr. Kenneth English, Superintendent of Schools, and Jerry Knight, Vocational Director. A basic timeline of what we needed to accomplish as a group was chiseled out. In October we took a trip to Austin where we listened to Art Lacy and Judy Lirette from TI, Bob Patterson from TEA, Mary Hendrix from ETSU, Linda Freeman and Susan Fogart from Newman Smith High School, Carol Marshall from the Center for Learning Success and Dr. Norton Grubb, author of *The Winning Hand, The Cultured Mind*, from UC Berkeley. We also previewed literature involving the integration of academics and vocational programs in the book fair.

We had meetings in October with local people involved in industry. These included Gary Williamson, IBM; Don Ellis, Southwestern Bell; Dr. Robert Smith, Optometrist and school board member; and Bruce Click and Ed Lanions, LTV.

In November we had a meeting with Bruce Click and Albert Marquez from LTV at the high school followed by a trip to TI where we heard from Bill Long, Art Lacy, Jerry Bayless, and Beth West. This was followed by a trip to LTV where Bruce and Albert gave us a guided tour of the plant and training facilities. Also in November, we had an inservice presented by the MHS Math Department which included Kay Prosser, Melissa Tidwell, and Linda Jobe. We also had 3 days of shadowing during this month.

Future resources include a trip to the Center for Success in Learning in Dallas, a two-day leadership training at TI, COPP training for the counselors in our group and a trip to view the facilities at Leander High School.

G. Students involved in the integrated math class will receive guidance and assistance from the 9th grade counselor and special populations coordinator as necessary throughout implementation.

The process will start out with a learning styles inventory which will be administered to all three experimental groups. A counselor will interpret the results to each class.

Pre- and post-tests will be ordered from the National Council of Teachers of Mathematics. A counselor will administer COPP. After results are interpreted to students, they will write a four-year plan which will include a coherent sequence of courses to be taken.

As a formal assessment (NAPT) results will be compared to the previous year results to ascertain student growth in mathematics.

H. Members of business, industry, and the community are represented on the focus committee. Information is shared through the education development committee of the Mansfield Chamber of Commerce. We have requested input from the community and are providing feedback, showing how we can better prepare students for employability, through our school district community newsletter which is distributed to all parents. The community is made aware and kept informed of the integration project through our local newspaper.

I. In this program, the impact of the project will be assessed on the basis of statistical analysis of various test results. Each student will take the National Council of Mathematics pre-test at the beginning of the program and post-test at the conclusion of the year. Results from these tests will allow students in our district to be compared with students throughout the country. For state-wide statistics, the NAPT test will also be administered at the end of the year. An evaluation of the scores from these validated, norm-referenced tests will be done to determine the program's effectiveness.

Action Plans

A. Plans for vocational classes to be integrated into physical science will begin during the second year of this three-year plan. Implementation would begin during the third year.

C. MHS Site Based Committee - The counselor, as a member of this committee, will update the members on the progress in the implementation of the Integrated Algebra class throughout the first year.

MHS Campus Improvement Plan - The counselor, as a member of this committee, will include the integrated algebra class in upgrading of curriculum to assist students in moving to a higher level math. During the first year, this will also be included as an item in the attempt to raise TAAS scores in mathematics.

MHS Department Heads Meeting - Information concerning the integrated algebra I class will be presented by the counselor in a meeting at the beginning of the second year to familiarize department heads with the focus of these classes.

D. Time Line

1991-92 Planning of Integration Project. Selection of algebra I as vehicle for integration. Writing of curriculum.

1992-93 Implementation of Algebra I (Integrated Algebra): development of geometry curriculum and biology courses.

1993-94 Full implementation to include language arts and preparation of integrated curriculum in social studies in 1994-95.

Focus Team Approval

We, the members of the MISD Focus Team, reviewed the District's Plan for Integrating Academic and Vocational Education. Recommendations for revision were made accordingly and we hereby approve this plan.

Jerry Bellows

Jerry Bellows
CVAE, General Mechanical Repair

Freddy Garza

Freddy Garza
Science

Lynette Jackson has relocated
to another district.

Lynette Jackson
Counselor

Kay Prosser

Kay Prosser
Math

Pam Rudnicki

Pam Rudnicki
Math

Mary Shores

Mary Shores
Office Education

Melissa Tidwell - McClure

Melissa Tidwell
Math

L Trammell

Louie Trammell
Science

Janie Washburn

Janie Washburn
Home Economics

Mike Whyte

Mike Whyte
Horticulture; Agriculture

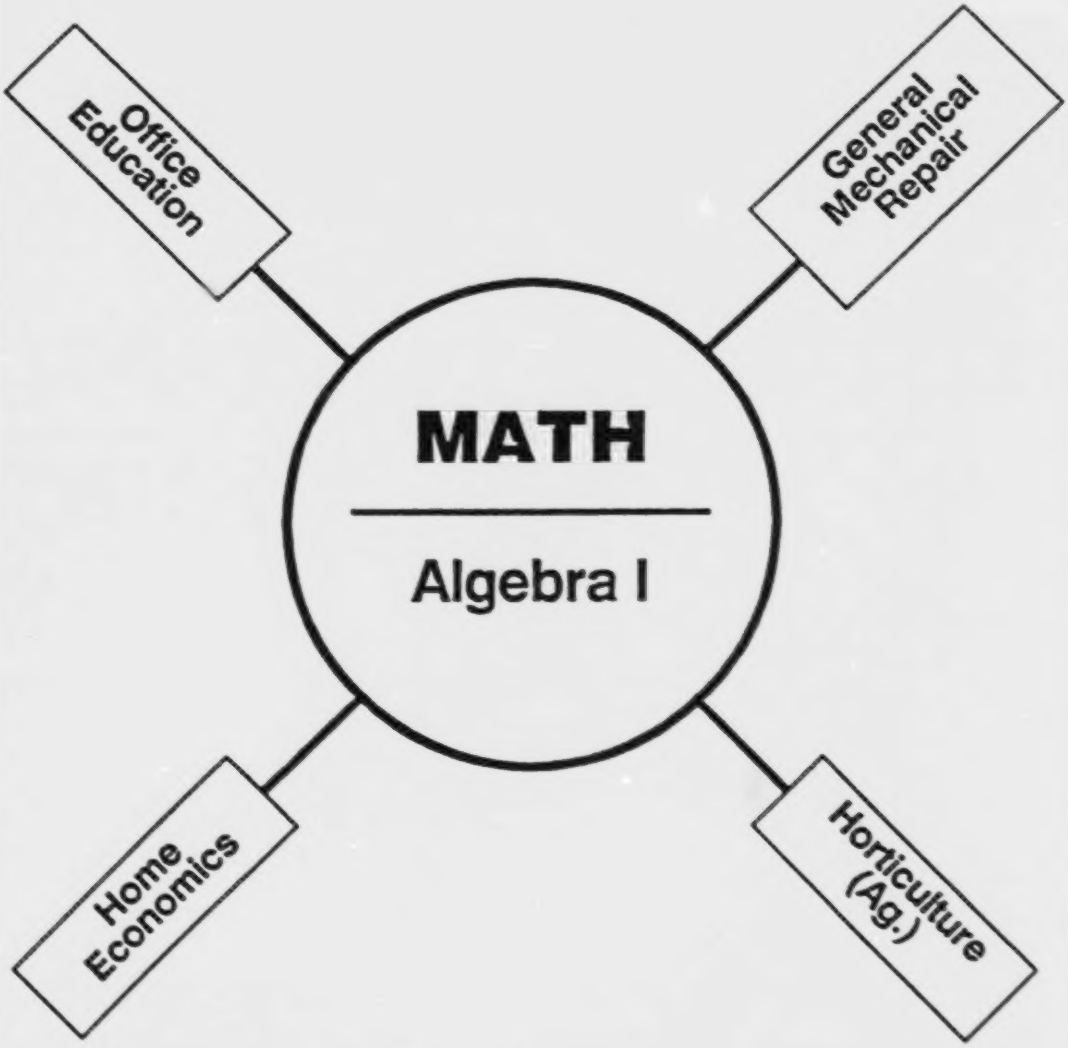
Jerry Knight

Jerry Knight
Vocational Director

Rachel Howell

Rachel Howell
Director of Curriculum

Academic Course/Outcomes as the Focus


Office Education
General Mechanical Repair
MATH
Algebra I
Home Economics
Horticulture (Ag.)

Three-Year Integration Plan

Model for Integration of Academic and Vocational Curriculum

Socorro Independent School District
El Paso, Texas

Socorro Independent School District
Three-Year Integration Plan

Integration Plan

A. Socorro ISD began its integration plan by choosing three programs to integrate over three years. The first program was our Health Occupations program. In the El Paso area there is a critical shortage of health care workers, and the demand is not being met by our local community college or university. Another reason for choosing the health occupations program was that we have an articulation agreement with our local community college in which our students are granted credit for their high school courses. Socorro ISD also is working with our local community college to develop a Tech-Prep program in health occupations. There are over 300 careers in the health occupations area from which students can choose a career.

After developing a successful integrated program in health occupations, plans are to move to our Office Education programs and Trade and Industry (Construction Carpentry) in the last year of our three-year plan.

Our integration plan will include the following academic courses:

English I, II, III, IV
Biology I, II
Chemistry I, II
Math: Pre-Algebra; Algebra I, II; Geometry
History: World History and American History

Reasons for choosing these programs are:

1. Willingness of faculty members in each department to work in an integrated program.
2. All of the courses are needed to meet TEA graduation requirements. Vocational programs will meet the needs of the students' elective courses.
3. Meeting the needs of local postsecondary institutions in regards to future Tech-Prep programs.

B. Socorro ISD chose to develop an integration model that resembles the Academy Model. We are developing a school within a school, having all teachers stay with students in blocked classes. To meet the needs of our students it was necessary to write TEA for a waiver to offer Health Care Science in 9th grade and add an additional Health Occupation III for the 12th grade. We plan to offer the following health occupations program for the school year 1992-93:

Health Science	9th grade
Health Occupations Education I (Lab)	10th grade
Health Occupations Education II (Clinical Rotations)	11th grade
Health Occupations Education III (Cooperative)	12th grade

Other changes that we will make will be to offer a two-hour math block and grant credit for Pre-Algebra and Algebra I. Students needing and wanting honors credit will be given an individualized program that will allow them to receive honors credit.

One of the biggest problems in trying to develop an integration program is having enough time for teachers to work and plan together. To solve this problem, all instructors in our integration program will have a zero period at the beginning of the day.

To meet some of the needs of our students and provide an opportunity to share information on careers, scholarships, etc., all students were assigned the same lunch period. Our lunch time enrichment program provided students with information on:

Volunteer opportunities at local hospital
Scholarship opportunities
Postsecondary health occupations programs available in El Paso
Military careers in medicine
Emergency medical services

C. Staff development is an ongoing process with never enough time in the day to accomplish all that is needed. Staff development is important for team building. Instructors involved in our integration program were invited to school one week before school started for an explanation of the integration program. Each instructor was given a notebook containing all information about our current plans, guides, curriculum material, and our pilot program with East Texas State University. During the year, standing monthly meetings were held and other special meetings were called to meet the needs of the instructors.

During the year, an in-service on the integration program was provided for all other faculty members. They were also provided information on the 300 careers available to students in the health occupations area.

Instructors in the integration program attended a two-day training program on students learning styles. It was very helpful to all instructors to see the relationship between learning styles and teaching styles.

Another in-service that all instructors attended was one on True Colors, a quick and easy way of identifying people and their personalities by seeing them as either Blue, Orange, Green, or Gold.

Future in-service training will include:

TAAS Training: how to help students prepare for and pass the TAAS Test.

Tour of community hospital for all instructors of integration program and counselors.

Team Building: learning how to work with others.

D. During the school year 1991-92, our first year of integration, we enrolled 137 students in our Health Occupations programs and our blocked academic classes. Enrollment in the 1992-93 school year is expected to be around 200 students. Students in the 10th, 11th, and 12th grades are self selected through an open enrollment into our programs. We made presentations to all 9th grade science classes at two middle schools. Students interested in our program were given an application to fill out and a class schedule to fill out to register for our classes. (see attached application)

Next year's plans include making presentations to explain our program to parent-teacher organizations, and middle schools career days which are held at each middle school, and, in January, to all 8th grade science classes.

E. The district's integration plan first began as a dream of two health occupations instructors to introduce students to careers in health professions and to develop skills common to medical disciplines. With the passage of the Carl Perkins Act, integration became more important to all vocational programs. To develop our district's integration plan, the following steps were taken:

1. Identify problem or need.
2. Get district commitment.
3. Provide start up funds; either federal, state, or local.
4. Select staff and faculty.
5. Establish tentative objectives.
6. Assign available space and facilities.
7. Identify students.
8. Schedule students.
9. Provide information for community support.

F. In the beginning, brainstorming sessions of all vocational and academic instructors involved in integration resulted in a nine-step plan. The plan required input from everyone and a policy for open communication among everyone in the program any time there is a want or need or an impediment to the program.

1. Identify the problem
    a. Health care industry's personnel shortage
    b. Longevity of general population continues to increase
    c. Enrollment currently does not address demand
    d. Encourage and recruit qualified applicants to the health care field.
2. Establishment of objectives for education
    a. District plan
    b. School focus
    c. Increase options for students
    d. Improve academic curriculum

    e. Career preparation

3. Develop program strategy
    a. Limited focus
    b. Health occupations theme
    c. Staff and community participation

4. Program administration
    a. Vocational director
    b. High school principal

5. School design and staff
    a. Assignment of available space
    b. Use of school facilities
    c. Staff selection-voluntary
    d. Staff participation
        1) scheduled development and appraisal of program
        2) conferences
        3) coordination of administration, faculty, parent, and student concerns
    e. Staff development
        1) area
        2) state
        3 national
    f. Parent participation
        1) advisory committee
        2) communication
        3) academic accountability of their student
        4) parent/teacher conferences
        5) transportation assistance
    g. Community participation
        1) advisory board
        2) guest speakers
        3) mentors
        4) articulation with postsecondary schools
    h. Student participation
        meet all academic requirements
        meet graduation plan
        meet all program requirements

6. Write curriculum.
    a. Integration of theme with essential elements
    b. Encourage innovation and risk taking
    c. Staff team building
    d. Professional advisory board input

7. Public relations.
    a. Program identity
    b. Equal access to all students
    c. Board public support

    d. Community involvement
    e. School recruitment

8. Organization of faculty and students.
    a. Expectations and attitudes
    b. Staff coordination
    c. Student leadership

9. Maintain support
    a. On-going program evaluation
    b. Commitment

G. Counseling of each student concerning grades, classes, career choices, and staying on task and grade level is very important to the integration program. To help students and instructors keep up with each students' progress, a student portfolio will be developed to include:

Grade
Courses completed
Resume
Accomplishments
Sampling of work
Skills
Job Evaluations

During the four years of high school, all students' portfolios will be stored in the Special Populations Coordinator office. This will allow access to all personnel who need to see information or place information in students' portfolio.

H. Business, industry, and the community played a very important role in preparing our integration plan. Articulation plans were developed, and Affiliation Agreements were signed by local hospitals and medical schools. The business community provided speakers for our student lunch time enrichment program and served as mentors to our students.

I. The evaluation procedures that were used to assess the impact on student achievement were varied. All instructors who were part of the project received a print out every six weeks that we called Honor Roll. All students with an average of 85 made the Honor Roll. All instructors were aware of each student's grades from the report cards and any student who showed signs of falling in a subject were called into the counselor's office for encouragement or help to bring their grades up.

Other evaluation criteria of our program were the number of students competing in our Health Occupations Student of Americia (HOSA) contest and the number of students advancing to state competition. We also looked at the number of students planning to enroll in postsecondary schools in health occupation fields. We used job evaluations from employers and the number of students employed in health fields.

Action Plan

Socorro High School for the Health Professions

(Academy Model-Integration Plan)

A. Strategies needed for implementation:

Administrative Structure

An Academy Model administrative chart (including job descriptions) will be developed. SISD will implement this activity. Fall 1992.

Identify Faculty

Faculty members will be recruited on a voluntary basis with an application and a demonstrated willingness to integrate core academic courses with health occupation vocational courses. (All courses will reflect a health care theme) Teachers will be from the disciplines of English, Math, Science, Social Studies and Health Occupations. Faculty will include a counselor/placement coordinator. This activity will be completed by the vocational director and health occupation teachers. No cost. Spring 1992.

Advisory Committee

An advisory committee will be recruited. The committee will be composed of parents, community health professionals and area health care facility administrators, and postsecondary educators. This committee will meet at least twice a year. The advisory committee will make recommendations for curriculum, evaluations, enrichment, and resources. Health occupation teachers will do the recruiting. No cost. Fall 1992.

Recruitment of Students

Students will be recruited from the feeder middle schools and high school. Presentations offered to PTO, counselors, teachers, and students will be given by health occupation teachers and special populations counselor. A recruiting brochure to be developed by the health occupations teachers will be used. The health occupation teachers and counselor will complete this activity. The cost of this item will be for substitute teachers needed for personnel release time and printing the brochure.

Application

Interested students will complete an application which includes a commitment statement from student and parents, a teacher recommendation, and an administrator recommendation. The application will require a transcript and current test scores. This will enable faculty to place student in proper level of academic courses. The application will be designed by the health occupation teachers. The cost will be for supplies to print the application. Spring 1992.

Blocking Students

The academy model will be used to schedule students with identified faculty members so that curriculum, scheduling, enrichment, and counseling can be facilitated. The high school scheduling administrator and clerk will be responsible for scheduling. No cost. Spring 1992.

Planning Period

Faculty will need a coordination/planning period. The resources of our school will not allow time to be taken from individual teachers' schedules, so teachers will add a zero period to their daily schedule and be financially compensated for this extra time. Vocational director will budget and facilitate this operation with appropriate contracts. The cost will depend on hourly salary of identified faculty. Fall 1992.

Centralized Location

Action on this plan will include the physical arrangement of classrooms so teachers who are working together will be in close proximity to each other. (Daily interaction will be simplified.) No cost. Fall 1992.

Academic Integration

The integration of academics and vocational classes will be an ongoing process facilitated by the planning period given to the identified faculty. Curriculum, lesson plans, evaluation, enrichment, joint projects, and counseling will be developed within the individual course essential elements structure. All courses will include a health care theme to include application skills in all study areas. Teacher training for all involved faculty members will be necessary to implement integration. Cost will reflect the amount of training, release time for teachers, and in-service presentation. 1992-93.

Expansion of Health Occupation Education Sequence

The current three-year sequence of courses will be expanded to a four-year program. (TEA approved)

9th grade	Health Care Science
10th grade	HOE I
11th grade	HOE II
12th grade	HOE III

The health occupation teachers will redesign the curriculum to implement the four year sequence. The additional year will reflect a year of preceptorship or clinical rotation at a clinical facility. The time implementation will be two years from the Fall of 1992. It will take beginning students this amount of time to reach the added year of instruction. The cost will be for transportation of students to clinical facility and the addition of one health occupation teacher to allow for on-site management of students while they are completing their clinical rotation.

Math Enrichment

The students at Socorro High School have demonstrated a weakness in their math skills as evidenced by their standardized test scores. To correct this deficit, the students will be placed in a two-hour math course during the 9th grade year to prepare them for future course selection. The placement will depend on the students' transcript and test scores. Students will receive two math credits during the 9th grade year in a Pre-Algebra and Algebra I block or an Algebra I and Geometry I block. Honors credit will be awarded to students who qualify. The cost of this action will depend on the release of teachers to teach the two-hour block. Fall 1992.

Supplementary Teaching Materials

Faculty will prepare an inventory of items needed to complete their curriculum needs that are not currently in place in their classrooms. This may include additional texts, models, workbooks, and teaching aids. Cost unknown. This item will be budgeted by the vocational director. Fall 1992.

Student Leadership Organization

HOSA (Health Occupations Students of America) will be used as a vehicle to encourage 100% participation of students and faculty, develop leadership skills, and promote community service, competition, and enrichment activities. Teachers and students will be responsible for this program. Funding will be provided by a composite of school district vocational funds and student generated funds (i.e. membership and student activities). School year 1992-93.

Lunch Time Enrichment Program

All students will be scheduled for the same lunch period for the purpose of student leadership activities (Health Occupations Students of America) and special guest speakers. School scheduler will be responsible for activity. No cost unless lunch is provided upon occasion. Time school year 1992-93.

Public Relations/Documentation

All activities of this program will be documented for public examination by minutes of advisory meetings, school district publications such as Spotlight, school newspaper, city newspapers, PTO meetings, school board meetings, campus teacher bulletins, school yearbook, and HOSA yearbook. All personnel involved with academy model, including faculty, students, parents, advisory committee, administration and community will share this responsibility. Cost will be related to activity. School year 1992-93.

Evaluation Tool

An evaluation instrument will be developed for program evaluation by faculty, students, parents, administration, and advisory committee to be used at the end of each academic year. There will be no cost. 1992-93.

The problems anticipated are probably more concerns than hard core stumbling blocks. They fall into three categories.

Teachers. Faculty recruitment is on a voluntary basis. Team building will be important. It will be a challenge to find the team and the time. Over-extension of time, talent, and stamina of staff is a concern.

Students. Student recruitment is an important component. Students' expectations for the program are a concern to the faculty. The strong academic schedule may require more commitment than many students are willing to give. There may be a drop-out percentage at the end of the year.

Administration. The designation of administrative responsibility has not been finalized. This has been a problem this year as high school administrative personnel have not taken an active part in the project. A definite chain of command needs to be established so assigned tasks have a built in accountability factor.

B. The methods/techniques to be used in educating the students in employee skills will include the following:

Employee skills

Classroom instruction in the following areas:

- Job application process
- Resume development
- Interview skills
- Exploration of job market
- Current requirements for certification, licensure, and articulation in 350 career opportunities
- Letter of resignation
- Entrepreneurship
- Current job descriptions
- Body language
- Telephone techniques
- Listening skills
- Communication skills
- Medical ethics

Laboratory/Worksite (Jobs)

- Monthly employer evaluation
- Self-evaluation
- Weekly journal
- Career specific job skills

Methods/Techniques

The methods and technique will be:

- Multi-sensory presentations
- Demonstrations
- Practice
- Immediate feedback
- Positive reinforcement
- Exercises to practice discrimination concepts and generalizations
- Multimedia
  - VCR
  - Filmstrips
  - Tape recorder
  - Printed text
  - TV
  - Computer
- Facilitate students with note taking techniques, exam skills, and material organization
- Dittos, outlines, and worksheets
- Use of medical references, dictionaries, and current journal articles
- Individual projects and assignments
- Group projects and assignments
- Task analysis
- Simulate realistic applications in laboratories
- Utilize progress charts
- Magnet program honor roll
- Enhance testing results
  - memory/retention
  - application
  - problem-solving
  - oral, written, and practical
- Horizontal and vertical alignment of correlated curriculum
- Utilization of student profile for learning style and hemisphericity

C. Teachers, School Boards, Community, Business, and Industry

Advisory committee composed of parents, community health professionals, health care facility administrators, and postsecondary school educators to assist with curriculum review.

PTO presentations will be made to parents to encourage students to choose to participate in Socorro High School for the Health Professions prior to the 9th grade admission date.

Affiliation agreements will be initiated between school district and health care facilities providing training sites for clinical rotations and cooperative jobs.

Articulation agreements with all postsecondary institutions in the local area will be pursued.

Medical related businesses will be solicited and encouraged to equip and supplement laboratories at school with "state of the art" technology and equipment.

Student professional organization (HOSA) members will be encouraged to participate in community wellness projects, health fairs, and fund-raising activities which feature health care in the community.

El Paso community will be encouraged to sponsor and recognize students' participation in the leadership and skills competition of Health Occupations Students of America.

In-service presentation, open houses, and bulletin announcements to inform teachers, counselors, and school board of program development at both middle school and secondary schools.

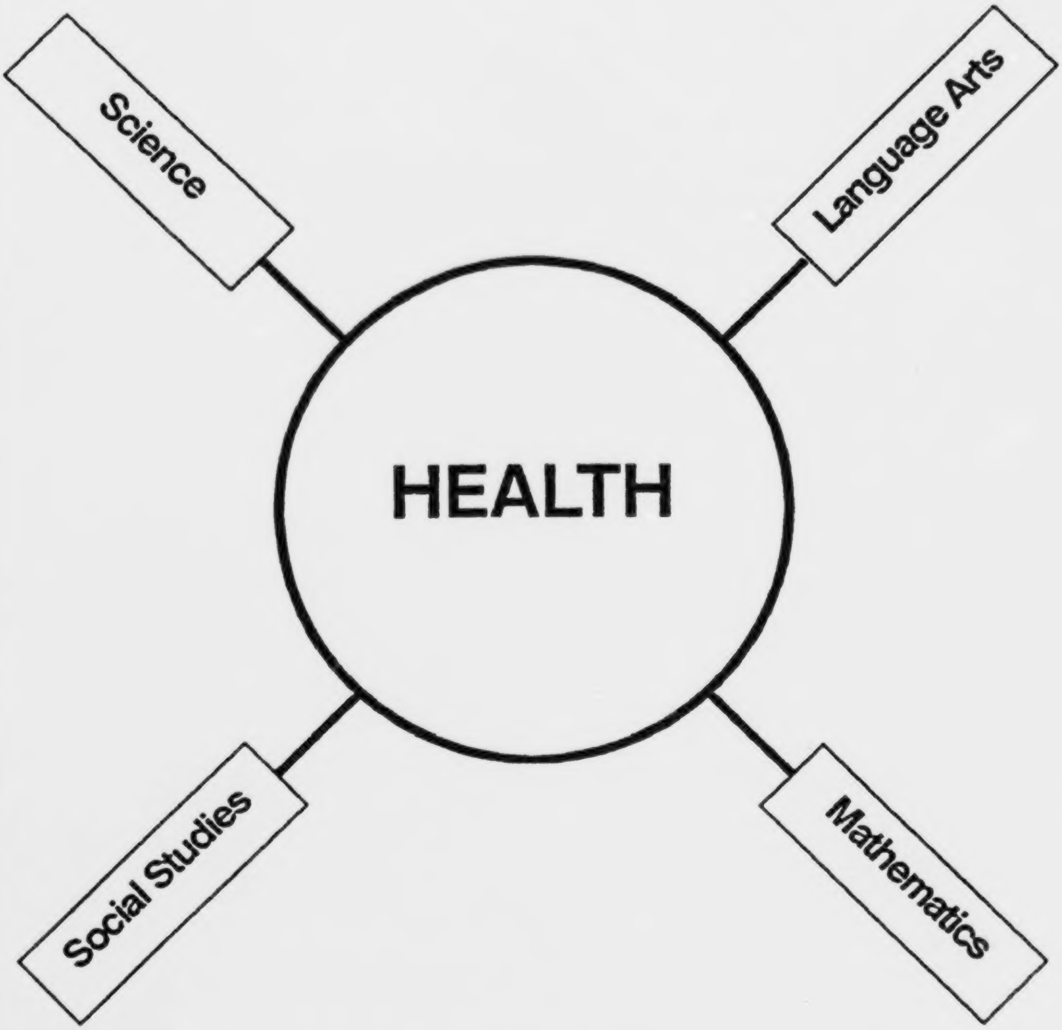
Focus Team Approval

We, the members of the SISD Focus Team, reviewed the District's Plan for Integrating Academic and Vocational Education. Recommendations for revision were made accordingly and we hereby approve this plan.

Paul Cunningham	Paul Cunningham Math
Roberta Carson	Roberta Carson Math
Jim Hinz	Jim Hinz Math
	Michael Quatrini Principal/Instruction Leader
Hilda Gorby	Hilda Gorby Business Computer Applications
Craig Small	Craig Small Construction Carpentry
Jan Kehoe	Jan Kehoe Health Occupations
Nancy Sochat	Nancy Sochat Health Occupations
Allen Long	Allen Long Special Populations Coordinator
Sue Frederick	Sue Frederick English
Charlotte Hawley	Charlotte Hawley Social Studies

Kim Murphy	Kim Murphy English
Ashley Wilson	Ashley Wilson English
	Joe Sanchez Social Studies
Ann M. Young	Ann Young Science
Prochnow	Jim Prochnow Counselor
Carl Cooper	Carl Cooper Director of Vocational Education
Sue Shook	Sue Shook Assistant Superintendent Special Programs

High-Priority Employment Opportunity as the Focus



HEALTH

Science

Language Arts

Social Studies

Mathematics

Integration Resources

The following pages include resources that will be helpful for teachers involved in integrating academic and vocational education.

Language Arts

Instructional Materials

Anderson, C. Wilson, T. Elli Cross, and Joan Mencke Stoner, *Essential Roots Essential Suffixes*, Educators Publishing Service, Inc., 75 Moulton Street, Cambridge, MA 02138-1104, 1-800-225-5750. Using multisensory techniques, *Essential Roots* helps student internalize the pronunciations, spellings, and meanings of the most commonly occurring roots. Covers ages 7-adult.

Anderson, C. Wilson, T. Elli Cross, and Joan Mencke Stoner, *Essential Roots Workbooks*, Educators Publishing Service, Inc., 75 Moulton Street, Cambridge, MA, 02138-1104, 1-800-225-5750. The *Essential Word Book* complements a variety or reading/language arts/vocabulary programs. The *Essential Roots Workbook* contains pretests, posttests, and activities. The units follow the sequence of the *Essential Word Roots Video* and *Essential Roots Word Book*. ages 8 to adult.

Applied Basic Skills Series: Mathematics, Science, and *Language Arts, Book* and *Student Learning Activities*, 1988, Extension Instruction Materials Center, University of Texas at Austin, P.O. Box 7218, Austin, TX 78713-7218, 512-471-7716 or 1-800-252-3461. This series features math word problems from grades 7 through 12 and is designed to motivate and encourage academically disadvantaged students to learn the basics by using practical life skills as a vehicle for learning. Focuses on real-life application, with information on career awareness and consumer education. Covers most of the essential elements for 7th through 9th grade math, science, and language arts. Includes cross-references to TAAS and TEAMS objectives, where appropriate. May be used for integration purposes in careers and industrial applications fields.

Applied General Education Through Technology Education, Guide, 1991, Extension Instruction Materials Center, University of Texas at Austin, P.O. Box 7218, Austin, TX 78713-7218, 512-471-7716, 1-800-252-3461. Comprehensive curriculum guide introduces teachers to an interdisciplinary approach for technology, education, language arts, math, science and social studies. Modules contain individualized lesson plans for each discipline with activities designed to provide an applied problem-solving learning experience for all students, centered around a common theme. The disciplinary concepts are tied together by an overlapping timetable to provide easy application and transfer of learning for students and optimum teachability for teachers.

Bushman, John H. and Kay Parks Bushman, *Teaching English Creatively*, Charles C. Thomas, Publisher, 2600 South First Street, Springfield, IL 62794-9265, 1-800-258-8980. Contents: Creating an Effective Classroom Climate; Getting Ready for Group Interaction; Teaching Oral English; The Teaching of Writing; Teaching Oral English; The Teaching of Writing;

Teaching Literature; Reading in the English Classroom; Teaching the English Language; Teaching Thinking Skills; the English Curriculum; Celebrate the Special Days; A Potpourri.

Career Choices: A Guide for Teens and Young Adults: Who Am I? What Do I Want? How Do I Get It? and supplemental text, *Possibilities: A Supplemental Anthology for Career Choices,* Able Publishing, 3463 State Street, Suite 219, Santa Barbara, CA 93'05, 805-967-8015. Complete interdisciplinary curriculum that integrates career education with academics.

Developing and Improving Written Communication: Grammar, Abbreviations, and Capitalization, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Designed to enable the student to become confident in the use of the elements of language arts. Contains 80 slides, 45-minute tape, instructor's guide and student activity packet.

Developing and Improving Written Communication: Punctuation, Numbers, Writing Sentences, and Paragraphs, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Developed to help the student with punctuation, numbers, writing sentences, and constructing paragraphs. Contains 77 slides, 44-minute tape, instructor's guide, and student activity packet.

Developing and Improving Written Communication: Writing Business Letters, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Serves as an introduction to writing business letters. It addresses the four most common types of business letters: a goodwill letter, a letter of request, a letter with a positive response, and a letter with a negative response. Contains 60 slides, 32-minute tape, instructor's guide, and student activity packet.

Documentation of Core Competencies and Key Skills, IML, 1989, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Competencies correlated to home economics in language arts, science, mathematics and social studies to prepare students for successful and productive employment.

English at Work, New Reader's Press, presents communication and problem solving skills in this multimedia resource for active learning. Teacher's guide, photocopy masters, audiotape, cartoon cards, posters, and photos included. Marketplace Products, 1-800-826-9972.

English For The World of Work, Second Edition 1992, Media Materials Publishing, Department 920301, 1821 Portal St., Baltimore, MD 21224, 1-800-638-2758. Presents a dual approach to learning the English language and proper employment skills. Interest level 6-12, Adult.

English on the Job, 1987, Center on Education and Training for Employment, The Ohio State University, 1900 Kenny Road, Columbus, OH 43210, 1-800-848-4815. Print and microcomputer versions offer special needs and at-risk students an opportunity to explore careers, practice basic English skills related to their exploration experiences, and provide diagnostic and remedial occupationally related English skills information.

Food Service: Vocabulary Module, IML, 1983, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Two units of terms: Food Service and Food Preparation. Four casette tapes, 262 slides, instructor's guide, and one student work manual. Audio-visual presentation for improving comprehension of vocabulary terms in food service. Approximately 100 terms with audio cassettes and a four-slide sequence to explain each term.

The Foundations of Literacy, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. In the book that began the Whole Language movement, a teacher/reading specialist/researcher presents important insights about teaching language arts. Includes dozens of specific classroom strategies.

A Guide to Classroom Publishing, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Suggestions for turning any classroom into a community of writers and readers.

Hess, Karlin K., *Enhancing Writing Through Imagery,* ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Introduction to using imagery in the secondary classroom.

Integrated Lesson Plans for Trade and Industrial Education, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Lesson plan modules contain plans in four academic areas: language arts, mathematics, science, and social studies. Each plan references both academic and T&I essential elements. Also included is a matrix which references TAAS objectives.

Integration of Mathematics, Science, and Language Arts Principles in the Home Economics Curriculum, Teacher's Guide, 1991, Lubbock, Home Economics Curriculum Center, Texas Tech University, Box 41161, Lubbock, TX 79409-1161, 806-742-3029, FAX: 806-742-30334. Reviews fundamental principles of mathematics, science, and language arts and suggests learning and evaluation experiences that reinforce academic principles within specific home economics content areas.

Johnson, R. T., D. W. Johnson and E. J. Holubec, EDS, *Structuring Cooperative Learning: Lesson Plans for Teachers 1987,* Interaction Book Company. Edina, MN, 1987, Features cooperative learning lesson plans by teachers who have used that process in their classrooms; also provides sample lessons for grade levels K-12 and various subject areas, including reading, language arts, mathematics, science, and social studies. Reproducible with some restrictions.

Knock'em Dead, AAVIM Vocational Resources Catalog 1992, American Association for Vocational Instructional Materials, 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. A resource for interview preparation with new sections on salary negotiations, drug testing.

Levine, Gloria and Nancy Polette, *ABC's of Reading, Thinking and Literacy*, ECS Learning Systems Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. A complete introduction to critical and productive thinking skills using literature to teens. Grades 7-12.

Life Skills English, Media Materials Publishing, Inc., Department 920301, 18221 Portal St., Baltimore, MD 21224, 1-800-638-1010. Special needs students learn basic skills such as using the dictionary and other reference books; making use of the library; answering a help-wanted ad, completing a job application; and shopping by catalog. Interest level 6-12, adult.

Mason and Davis, *What's the Question? Understanding and Thinking Exercises*, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Increase your students' reasoning and comprehension abilities through these self-contained worksheets using self-questioning methods.

Orgel, Joseph R., *College Entrance Review in English Composition*, Educators Publishing Service, Inc., 75 Moulton Street, Cambridge, MA 02138-1104, 1-800-225-5750. This updated edition contains two basic categories of material—the tests themselves and the material to prepare students to take the tests. The former is entirely new, while the latter combines new, revised, and unchanged material from the original book. Preparatory material includes explanation of the nature of the achievement test in English composition, analysis of type of objective questions, discussion of the written essay, review of the principles of grammar and rhetoric, and glossaries of usage and faulty diction and expressions. Grades 11-12.

Office Education Lesson Plan Modules, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX (903) 886-5744. Contain plans in four academic areas: language arts, mathematics, science, and social studies. Each plan references both academic and OE essential elements. Also included is a matrix which references TAAS objectives. Areas developed include: Business Computer Applications; Business Information Processing; Microcomputer Applications; Office Administrative Systems; and Office Support Systems.

Pauker, Robert A., *Math and Writing*, Educators Publishing Service, Inc., 75 Moulton Street, Cambridge, MA 02138-1104, 1-800-225-5750. For students who are good at math but are reluctant to write, these two books offer practice in important language arts skills. *Math and Writing* concentrates on the sentence, with some attention to short, simple paragraphs.

Pauker, Robert A., *Math and Writing 2*, Educators Publishing Service, Inc., 75 Moulton Street, Cambridge, MA 02138-1104, 1-800-225-5750. Focusess on four paragraphing skills: organizing information, choosing relevant material to support a topic sentence, using transition words within a paragraph, and writing a concluding sentence. Students who use this book should be competent in the following math skills: multi-digit multiplication; long division; addition, subtraction, multiplication, and division of dollars and cents; and percents and their related fractions and decimals. Grades 7-9.

Paul, Richard, *Critical Thinking: What Every Person Needs to Survive In A Rapidly Changing World*, Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940.

Polette, Nancy, *Novel Thinking*, ECS Learning Systems Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Designed for use with students in gifted and regular programs that stress development of thinking skills and appreciation of literature. Grade 6-12.

Resumes That Knock'em Dead, American Association for Vocational Instructional Materials, 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Real examples are used for instructional purposes. Examples of resumes include those for changing careers, high salaries, and how to personalize your resume.

Rotalo, Susane K., *Right-Brain Lesson Plans For A Left-Brain World: A Book of Lesson Plans for English and Speech*. Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH.

Rudd, Josephine, *Word Attack Manual*, Educators Publishing Service, Inc., 75 Moulton Street, Cambridge, MA 02138-1104, 1-800-225-5750. A revised booklet which develops satisfactory word recognition and spelling skills. Format is designed to appeal to the older student even when very basic work is being covered. Each of the ten lessons is divided into Instruction, Review, Practical Application, and Test. Contents include lessons on syllables, syllabication, and accent; consonants and consonant blend; digraphs; diphthongs; vowel-*r* combinations; prefixes, suffixes, and compound words. Ten tests are in an accompanying booklet; Teacher's Answer Key contains reproductions of both exercise and test pages with answers.

Short Lessons in English, ECS Learning Systems Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. High-interest worktext reinforces basic English applications to writing, speaking, listening, and library skills. Grades 8-9.

Sinatra, Richard and Josephine Stahl-Gemake, *Using The Right Brain In The Language Arts*, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH.

Tactics to Tackle Thinking: Creative Activities for the English Classroom. ECS Learning Systems Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Teaching units show creative methods to include higher-order thinking skills in the secondary English curriculum. Grades 7-12.

Trade and Industrial Education Lesson Plan Modules, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: (903) 886-5744. Contain plans in four academic areas: language arts, mathematics, science and social studies. Lesson plans in most cases require the assistance of academic teachers for producing instructional materials for use with the lesson. Each plan references both academic and T&I essential elements. Also included is a matrix which references TAAS objectives. Areas developed include: automotive tech; auto collision repair; building trades; cosmetology; and, drafting.

You and the Mass Media, ECS Learning Systems Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Students study various media interactively through exercises. Grades 10-12.

Vocational Writing Skills Pack, Piney Mountain Press. The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. An ideal tool for initiating academic/vocational integration. Enhances communication skills for vocational students in their specific training area and provides practical job-related writing practice. Satisfies requirements of the new Carl D. Perkins Vocational Act.

What's Whole in Whole Language, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. The essence of the whole language movement, including examples of programs that work; tips for parents and teachers; and suggestions for building a program in your classroom. All levels.

Why Study English?, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX (903) 886-5744. A fast paced, humorous video that shows many examples of how important basic English and communication skills are for the work world. Using a positive role model approach, this video uses characters and situations familiar to students. One 29-minute videocassette and reproducible worksheets.

Workplace English: Barber/Cosmetologist by Conover Company, 1990, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Workplace English: Nurse's Aide/Assistant by Conover Company, 1990, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Write For Your Life, Educational Press, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. An integrated curriculum incorporating English grammar and mechanics in the context of everyday work, school, and personal writing activities.

Write Into A Job, AAVIM Vocational Resources Catalog 1992, American Association for Vocational Instructional Materials, 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Encouraging a natural writing process to "paint a picture with words", field-tested by regular and special educators in English.

Writing Across the Curriculum, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Structured lessons guide students through writing activities in math, science, language arts, social studies, and art. Grades 5-8.

Writing Warm-Ups, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Brief and creative writing activities for teachers who want students to make the most of every minute in the classroom. Presented in calendar format. Grades K-6, 7-12.

Instructional materials catalogs

1992 Cambridge University Press Complete Catalog and Index, 40 West 20th Street, New York, NY 10011-4211, Rep.: Michael White, Fort Worth, TX, 817-232-8827, FAX: 817-232-8827.

1992 Language Arts Catalog, Grades 6-12. Holt, Rinehart and Winston, 8551 Esters Blvd., Irving, TX 75063, 1-800-225-5425, FAX: 1-800-874-6418. Features newest in electronic technology.

BLS Inc., Tutorsystems 1990 Basic Skills Tutorial Software, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252. Adult Education, Grade School, Junior, Senior High, Remedial Skills for All Ages.

Education Catalog, Franklin Learning Resources, 122 Burrs Road, Mt. Holly, NJ 08060, 1-800-525-9673.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX (903) 886-5744.

Globe Book Company 1992 Catalog Grades 6-12, Globe Book Company, 4350 Equity Drive, P.O. Box 2649, Columbus, OH 43216, 1-800-848-9500. Classroom curriculum materials in social studies, language arts, science, and mathematics.

Steck-Vaughn Company, P. O. Box 26015, Austin, TX 78755, 1-800-531-5015.

Periodicals, papers, and presentations

Duin, A.H., "Implementing Cooperative Learning Groups in the Writing Curriculum," *Journal of Teacher Writing*, Vol. 5, 1986, pp. 315-323.

Felio, Genelle, "Cooperative Learning in English," *English Journal*, Vol. 79, No. 6, October 1990, pp. 74-77.

Felio, Genelle, "Try This Approach to Teaching Writing", *English Journal*, Vol. 79, No. 6, October 1990, pp. 74-77. The editors solicited a response from public school English teachers in regard to this question: "How are you using collaborative or cooperative learning in your classroom?" Eight short responses are included.

Harrington, Lois G., "Making Common Cause: Integrating Academic and Vocational Studies," National Association of Secondary School Principals, Curriculum Report, Vol. 18, No. 1, September 1988. (ED 298 656.)

"Speaking and Listening in Vocational Education," 1983, *ERIC* No. ED 226 206.

AVA Column, Vocational Education Journal, April 1992,

"Writing in Vocational Education," 1983, *ERIC* No. ED 229 594.

Software

Across the Curriculum, 1991-1992 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514. Contains everything students need to learn, practice and use four basic computer skills. Book contains 100 lesson plans with reproducible masters for projects in math, language arts, science and social studies.

Anderson, C. Wilson, T. Elli Cross, and Joan Mencke Stoner, Essential Roots, Essential Suffixes, Educators Publishing Service, Inc., 75 Moulton Street, Cambridge, MA, 02138-1104, 1-800-225-5750. Using multisensory techniques, Essential Roots helps students internalize the pronunciations, spellings, and meanings of the most commonly occurring roots. In Essential Suffixes, students learn that changing a suffix changes the part of speech, and suffixes as a group do not alter the general meaning of a word. Each section of the suffix program provides examples of words with the suffix to be added. 7-adult. Essential Roots—Apple and IBM, Essential Suffixes, IBM only.

Basic Reading Skills, Piney Mountain Press, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. A remedial and developmental reading program wherein students learn content and comprehension and use critical thinking skills with written text and software.

CCC Instructional System, Computer Curriculum Corp., Simon & Schuster Education Group, 1701 West Euless Blvd., Suite 139, Euless, TX 76040, 1-800-772-7177. Computer Curriculum Corporation (CCC) has researched and produced computer-assisted instruction that has achieved outstanding results. This instruction can be delivered in a system of networked microcomputers or in a SOLO unit. Programs are available in math, reading and language skills.

Compute-A-Match, Pesco International, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Incorporates S.A.G.E. and J.O.B.S. II systems and meets and exceeds all state and federal requirements for classifying jobs in performing matches. Extremely comprehensive and time efficient and an excellent aid to vocational guidance.

English Grammar, Computer Direct, Inc., Computer Showroom, 22292 N. Pepper Rd., Barrington, IL 60010, 1-800-289-9473. Sharpens grammar skills and teaches good English usage. Grades 4-above.

English on the Job, Careers, Inc., 1211 10th St., S.W., P.O. Box 135, Largo, FL 34649-0135, 1-800-726-0441. Allows special needs and at risk students an opportunity to explore careers and practice basic skills related to their exploration experiences, and provide diagnostic and remedial occupationally related skills information. Students discover how various English concepts and skills are used in occupations, apply these skills in the performance of selected tasks, and consider the education and training requirements for selected occupations.

Basic competencies required on the job include the ability to:
Vocabulary—Spell words, find correct definitions, know word meanings.
Listening—Identify facts, directions, and meaning of words, make judgments.
Speaking—Use correct pronunciation, give information or directions, obtain facts.
Reading—Identify written facts, explain meaning of written materials
Writing—Capitalization, punctuation, and grammar; write short notes, conveying information; fill out forms.

The Integrator Academic and Vocational Integration Series, Conover Publishing Company, Omro, WI, 1991, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230.

214-991-5252. or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Does an excellent job of integrating competencies with actual occupations, though the total cost of this package may seem somewhat expensive. The Integrator Series contains Math Module; English Module; Reasoning Skills Module; Interpersonal Skills Module; and Math & English Module (or learning activity packets). Through a diagnostic component found in each major part, remediation of skill deficiencies is made easier to perceive and correct.

J.O.B.S. II: The On-Site Computerized D.O.T. Management System with Optical Scan Data Entry and Test Scoring Capabilities, Pesco International, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Gives the user the ability to update their copy of the D.O.T. as changes are made; track client performance on competencies or tasks; match clients to occupational courses and curriculum by year—required courses and recommendations on math and language based on stanines.

Language Arts/Reading, 1992 Radio Shack Educational Products Guide, Tandy Corporation/ Radio Shack, 1600 One Tandy Center, Ft. Worth, TX 76102, 817-390-3091. Featuring instructional techniques for language arts skills, special populations, and skills bank basic skills.

Mechanics, Vocational Reading Skills, Aquarius, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. User-friendly programs with no need for teacher involvement in computer instruction. Program includes General Operating Principles; Lubrication; Cooling Systems; Ignition Systems; and Air Conditioning. Materials are suitable for use with mainstreamed students and students with impairments and disabilities.

Merriam-Webster Dictionary, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Ninth New Collegiate Dictionary with sound. Each word is defined and pronounced for you. Macintosh.

Modern Writing Skills, Piney Mountain Press, The Education conneXtion, 12597 Montyego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. This is an Interactive Approach to writing that coordinates with required reading and utilizes critical thinking skills.

New Grolier Electronic Encyclopedia, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. The 1991 edition includes all 21 volumes, 33,000 articles and 10 million words of the Academic American Encyclopedia. Includes thousands of color and b/w pictures, maps, and sounds. Requires headphones or speakers connected to CD-ROM for sound. PC version requires VGA for pictures. Optional Teacher's Guide includes four sections: Literature/Language Arts, History/Social Studies, Science/Math, and Reference Skills. With answer key, tips and reproducible masters. MAC and PC.

Shop Talk Program, Piney Mountain Press, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The Shop Talk program disk will create up to 7 types of vocabulary worksheets in minutes. Words and definitions may be changed, added or new disks may be created entirely with individual's own words and definitions.

Spell It Plus!, Computer Direct, Inc., Computer Showroom, 22292 N. Pepper Rd., Barrington, IL 60010, 1-800-289-9473. Makes spelling fun and entertaining as students work their way through learning activities. Ages 10 to adult.

Success with Literature, Scholastic Inc., P.O. Box 7502, Jefferson City, MO. 65102, 1-800-541-5513. With this innovative series of programs, students explore works of literature by writing about them. Each program focuses on a different literary classic. While students are reading each work, they can refer to the Student booklet which provides important background information about the author and the time period as well as the book's themes, characters, point of view, and other literary conventions. A set of writing activities guides students through all the steps of writing an essay from exploring a thesis to organizing, drafting, revising and printing their paper. Many classic titles are available. Components: Teacher's Edition for each title includes the Student Edition (one program disk not copy-protected), one Student Booklet, and Teaching Guide with blackline masters. System requirements: Apple—128K, MS-DOS—256K.

Success with Writing, Scholastic Inc., P.O. Box 7502, Jefferson City, MO. 65102, 1-800-541-5513. Program combines structured writing software and a full-featured word processor with a comprehensive Student Activity book and Teaching Guide—everything needed for a complete writing program! A series of lessons and assignments guide students through the entire writing process for a variety of assignments, including descriptive paragraphs, book reports, persuasive essays, explanatory essays, and stories. Students brainstorm ideas, develop outlines, create drafts, revise, edit, and finally print their compositions. Components: program disks; student activity/teacher utility disks; (all disks not copy-protected), a 176 page student activity book, and teaching guide. System Requirements: Apple—128K; Macintoch—1MB, MS-DOS—256K.

Van Genderen, Bud, "Jumpstart Your English Classroom! 50 Curriculum Based Computer Activities (K-12), Instructional objectives and a full description of the activity in a classroom setting is supplied for each lesson. Activities may be adapted for most computers and software, and many grade levels. Includes sample worksheets, tips and techniques, etc. Skyline Publications, 114 N. 13th St., Prospect Park, NJ 07508.

Vocabulary Challenge, Mindscape Educational Software, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-264-2926. Sharpen vocabulary skills with four activities that reinforce word association, analogy, recognition, classification and meaning for over 3,000 words. Grades 2-12.

Word Attack Plus!, Computer Direct, Inc., Computer Showroom, 22292 N. Pepper Rd., Barrington, IL 60010, 1-800-289-9473. Helps students learn new words, their definitions and spelling. Builds vocabulary skills essential to reading, writing, and speaking. Grades 4-12.

Word Processor, Smartworks Software, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-624-2926. Teaches students to plan and write papers more effectively. Includes: Outliner, Report Writer and Calculator.

Word Works 1, 2, 3, Pesco, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Vocabulary development software. Creates 20 different vocabulary worksheets. Career Words series has vocabulary development software for 17 vocational courses.

Write For Your Life, Educational Press, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. An integrated curriculum incorporating English grammar and mechanics in the context of everyday work, school, and personal writing activities. Interest level ranges from grades 7-12, Adult.

Software catalogs

1992 Catalog, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-624-2926. Excellent source of software and CD-Rom/Laserdiscs. Covers all facets of rapidly advancing technology.

Computer Direct, Inc., Computer Showroom, 22292 N. Pepper Rd., Barrington, IL 60010, 1-800-289-9473. Source for IBM compatible computers, software and accessories.

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

MECC Education Catalog 1991-92, 6160 Summit Drive North, Minneapolis, MN 55430-4003, 1-800-685-MECC. Contains several comprehensive and innovative softwear programs for spelling.

Vocational Education Software & Videos Catalog, Piney Mountain Press, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Many software programs and applied lessons for English, including Workplace English Complete series by Conover Company.

Videos

Auto Service Vocabulary Module—Special Needs, IML, 1981, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers terminology for tool identification and under-hood inspection. Packet includes approximately 100 terms explained in a four-step sequence, instructor guide and one student work manual.

Bill Cosby Teaches Reading, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Two discs cover comprehension and vocabulary aimed at basic reading skills. Videodisc.

Essential Word Roots Video, C. Wilson Anderson, Jr., T. Elli Cross, Joan Mencke Stoner, Educators Publishing Service, Inc., 75 Moulton Street, Cambridge, MA 02138-1104, 1-800-225-5750. This videotape presents fourteen sets of roots through multisensory techniques, and shows students how to internalize the pronunciations, spellings, and meanings of the most commonly occurring roots. Ages 7 to adult.

Long, Thomas E., *Basic Reading Skills and Vocational Education,* 1980, Center on Education and Training for Employment, The Ohio State University, 1900 Kenny Road, Columbus, OH 43210, 1-800-848-4815.

Tyson, Cicely, *Writing for Work,* Ztek Co. P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Tyson hosts this program designed to teach successful business writing skills. Grades 8-up. CAV Videodisc.

Your Educational Skills: Don't Leave Home Without Them, VAP Foundation, 23 Meadow Drive, Camp Hill, PA 17011-8331, 717-761-3381. Since most students do not connect what they have learned in high school with future occupational success, this new 20-minute video casette helps bridge that gap by illustrating how math, language, and reasoning competence is needed in the fifty fastest growing jobs in the United States.

Video Catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

MECC Education catalog 1991-92, 6160 Summit Drive North, Minneapolis, MN 55430-4003, 1-800-685-MECC. Innovative and comprehensive programs in educational technology. Apple II and IBM.

United Learning Curriculum-Based Programs 1991-92 Catalog of Audio-Visual Instructional Programs, Piney Mountain Press, P.O. Box 333, Cleveland, GA 30528, 1-800-255-3127.

Math

Books

Artzt, A. F. and C. M. Newman, *How to Use Cooperative Learning in the Mathematics Classroom*, National Council of Teachers of Mathematics, 1990, Reston, VA. A manual developed under the auspice of the NCTM on how to incorporate various cooperative learning strategies in mathematics classrooms across the grade levels.

Brown, Susan, *Developing Math Learning Skills: A Parallel Support Course for the Math-Anxious Student*, WEEA Publishing Center, Education Development Center, Inc., 55 Chapel Street, Suite 265, Newton, MA 02160, Customer Service 1-800-225-3088.

Davidson, Neil, Ed., *Cooperative Learning in Mathematics: A Handbook for Teachers*, Addison Wesley, 1990.

Lucas, Jerry, *Becoming a Mental Math Wizard*, Shoe Tree Press, a subsidiary of Betterway Publications Inc.

Maley, D., *The Integration of Mathematics and Science into Technology Education: A Holistic Approach to Education*. The University of Texas at Austin, Extension Instruction and Materials Center, Austin, TX.

O'Neil, John, "Raising Our Sights: Improving U.S. Achievement in Mathematics and Science," in *Issues Analysis*, Association for Supervision and Curriculum Development (ASCD), 1250 N. Pitt Street, Alexandria, VA 22314, 703-549-9110.

Willoughby, S.S., *Mathematics Education for A Changing World*, ASCD. 1990.

Instructional materials

Algebridge, Educational Testing Service and The College Board, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. Developed to help students succeed in the transition from arithmetic to algebra. Used primarily as a year-long supplement in Pre-Algebra or Algebra I. It has also been used as the primary text in remedial programs. Students work through the carefully sequenced problems in the assessments and discuss their responses in class, focusing on how they arrived at their answers, allowing you to pinpoint where they have misconceptions and gaps in understanding.

Applied Basic Skills Series: Mathematics, Science, and Language Arts, Book and Student Learning Activities, 1988, Extension Instruction Materials Center, University of Texas at Austin, P.O. Box 7218, Austin, TX 78713-7218, 1-800-252-3461. This series features math word problems from grades 7 through 12 and is designed to motivate and encourage academically disadvantaged students to learn the basics by using practical life skills as a vehicle for learning. Focuses on real-life application, with information on career awareness and consumer education. Covers most of the essential elements for 7th through 9th grade math, science, and language arts. Includes cross-references to TAAS and TEAMS objectives, where appropriate. May be used for integration purposes in careers and industrial applications fields.

Applied General Education Through Technology Education, Guide, 1991, Extension Instruction Materials Center, University of Texas at Austin, P.O. Box 7218, Austin, TX 78713-7218, 512-471-7716, 1-800-252-3461. Comprehensive curriculum guide introduces teachers to an interdisciplinary approach for technology, education, language arts, math, science, and social studies. Modules contain individualized lesson plans for each discipline with activities designed to provide an applied problem-solving learning experience for all students, centered around a common theme.

Applied Mathematics, Student Resource Book, 1990. Center for Occupational Research and Development, (CORD) 601-C Lake Air Drive, Waco, TX 76710, 1-1-800-231-3015.

Basic Essentials of Mathematics, Third Edition, Parts One and Two, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 1-800-531-5015. Basic Math skills and practice for high school and adult learners who have not mastered required math competencies. Each book includes Master tests and Answer keys.

Basic Skills Applications in Career Investigation, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. The equal importance of vocational and academic education is a top priority for public education in the State of Texas. Manual includes over fifty hands-on activities which allow students to apply mathematics, science, communications, social studies, and employability skills to over 75 career opportunities.

Basic Surveying Techniques, MAVCC, 1987, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-886-5744, FAX 1-903-886-5744. Provides surveying students with information and hands-on application for taking horizontal, vertical, and angular measurements for various types of surveying.

Brown, Walter C., *Blueprint Reading for Industry*, Goodheart-Willcox Company, Inc. 123 W. Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440. A training course that provides instructions in basic blueprint reading for the metalworking and plastics industries. Can be used by both expert and novice readers. Beginning with the basics (reading a steel rule, understanding orthographic projection), the text progresses logically to advanced skills, such as reading welding blueprints and numerical control documents.

Buck, Donna Kay and Francis Hildebrand, *Math-O-Graphs*, grades 4-8, 1991, (Midwest Publications), Critical Thinking Press and Software, P.O. Box 448, Pacific Grove, CA 93950, 1-800-458-4549. Teaches students how to use graphs to solve problems. Graph types span 14 major areas of the math curriculum.

Camilli, Thomas, *Calculator Conundrums*, 1991, (Midwest Publications), Critical Thinking Press and Software, P.O. Box 448, Pacific Grove, CA 93950, 1-800-458-4549. Puzzles that encourge students to explore history, science, math and creative reasoning as they become adept at using the calculator.

Campbell, Patricia F. and Gerald Kulm, *Developing Mathematics Skills*, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 512-343-8227 or 1-800-531-5015. While written for adult education, this book is relevant to high school students in advanced classes.

Carson, Joan C. and Bostick, Ruby N., *Math Instruction Using Media and Modality Strengths: How...It Figures*, Charles C. Thomas, Publisher, 2600 South First Street, Springfield, IL 62794-9265, 1-800-258-8980. Contents: Introduction; Modalities and Modality Based Instruction; The Auditory, Visual and Kinesthetic Learner; Characteristics of Modality Based Classrooms; Effective Media Utilization; Facilitating Media Use; Visual, Auditory, and Kinesthetic Media; Multisensory Media; Mathematics Curriculum and Instruction; Math and Media Use; Math and Modality Based Instruction; Materials for Math Instruction: Texts, Games and Manipulatives; Selected Approaches to Math Instruction; Problem Soilving and Solving Problems; Summary. Index Key Terms, References.

Carson, Joan C. and Ruby N. Bostick, *Math Instruction Using Media and Modality Strengths: How...it Figures*, Charles C. Thomas, Publisher, 2600 South First Street, Springfield, IL 62794-9265, 800-258-8980. Contents include modalities and Modality Based instruction; The Auditory, Visual and Kinesthetic Learner; Effective Media Utilization; and Selected Approaches to Math Instruction.

Cawley, John F., Anne Marie Fitzmaurice-Hayes, Robert A. Shaw, Kay B. Norlander, and Johanna Sayre, *Learner Activity Program for Developmental Mathematics*, Pro-Ed 1991 Catalog, 8700 Shoal Creek Boulevard, Austin, TX 78758-6897, 512-451-3246. Teaching number concepts, whole numbers and fractions is much easier using this new interactive approach to teaching math for grades K-9. Useful for any student who experiences difficulty in math, this flexible approach shows how to assess your students' divergent learning styles and needs and design instruction plans that build on strengths.

Consumer Issues, Workbook, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 1-800-531-5015. Features excellent activities, though no table of contents and black and white pictures. However, there are excellent possibilities for integration of economics, math and English with consumer and family economics.

Contemporary Precalculus Through Applications Functions, Data Analysis and Matrices, Mathematics Department, North Carolina School of Science and Mathematics, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. This text is a model for the teaching approach of the NCTM Standards. It provides teachers and students with an applications-oriented, investigative mathematics curriculum in which students use graphing calculators and computers to solve problems and to enhance their understanding of mathematics. The content includes many traditional precalculus topics with a heavy emphasis on data analysis and modeling.

Core Employment Skills, IML, 1990, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers basic skills needed to find and keep a job in any chosen field, includes human relations, decision-making, personal employability skills, self-esteem, communications, math skills and entrepreneurship.

Copes, Wayne, William Sacco, Clifford Sloyer, and Robert Stark, *Contemporary Applied Mathematics;* Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. This acclaimed series will help you implement the NCTM Standards. Statistics (Standard 10), Mathematics and Medicine, Glyphs, and Queues modules each include instances requiring student to use data in charts, tables and graphs from real-world situations. Probability (Standard 11) including optimization techniques are also covered.

Crouse, Richard J. and Clifford W. Sloyer, *Mathematical Questions from the Classroom,* Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. For experienced and beginning teachers alike, this text provides a comprehensive review of teaching strategies for specific concepts within the mathematics curriculum. Part I covers topics in the junior high curriculum; Part II covers advanced topics in secondary mathematics.

Designing District Evaluation Instruments for Math and Process Skills. Contact Shelly Lipowich, Math/Science Consultant, 6321 North Canon del Pajaro, Tucson, AZ 85715; Tel.: 602-299-9583; FAX: 602-886-2370. ASCD Network, *ASCD Update,* Vol. 34, No. 1, January 1992, pp. 4-5.

Documentation of Core Competencies and Key Skills, IML, 1989. Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Competencies correlated to home economics in language arts, science, mathematics, and social studies to prepare students for successful and productive employment.

Dynamic Programming, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. Optimization techniques are increasingly recommended as an important new topic for the mathematics curriculum. This module presents techniques for finding optimal solutions when each decision depends upon previous ones.

Dunlap, Kathi, *Mathematics for Health Occupations*, 1991, Delmar Publishers, Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707, FAX: 518-459-3552. Text contains full year of mathematics instruction geared specifically to health occupations, such as reading and recording vital signs, measurement, metric system as it relates to health, with the final section dealing with mathematical knowledge necessary to operate an office.

Eggsgard, John, Gary Flewelling, Craig Newell, and Wendy Warburton, *Making Concections*, Jason Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. These illustrated blackline masters will intrigue your students and motivate them to learn more about some creative, nontraditional applications of mathematics. You'll find lessons and related questions on mathematical modeling of the greenhouse effect, secret codes and large primes, and comets and black holes. Grades 9-12.

Farrell, Margaret A. and Farmer, Walter A., *Secondary Mathematics Instruction*, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. Provides teachers with a comprehensive guide which incorporates practice the current theory and research. Addresses major goals of the Curriculum and Professional Teaching Standards.

Fractions, OK, 1989, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Applied practice of mathematical skills in vocational settings. Covers understanding fractions, proper, improper, mixed, and equivalent fractions; converting and reducing fractions; addition, subtraction, multiplication, and division.

Giblin, Peter, *Mathematical Challenges*, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. An excellent resource of problems to liven up math classes. Can be used with pre-algebra students and a subset of problems can be modeled physically or graphically. Topics range from logic, counting, and pattern recognition to geometry, trigonometry, algebraic manipulations, and motion.

Giblin, Peter, *Mathematical Challenges*, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. An excellent resource of problems to liven up math classes. Many are humorous. Can be used with pre-algebra students and a subset of problems can be modeled physically or graphically.

Global Atlas, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. Helps meet The Standard's goals for statistics, connections and communication. The many charts, graphs, tables, photographs, diagrams, and maps will enhance your student's abilities to read information in many forms.

Globe High School Mathematics, Globe Book Company, 4350 Equity Dr., P.O. Box 2649, Columbus, OH 43216, 1-800-848-9500. Motivates through real-life examples and applications that point out how mathematics is used in student's lives. Develops problem-solving and critical thinking skills in every lesson.

Glyphs, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. Glyphs are picture graphs, tools for presenting multi-dimensional data pictorially to make it more meaningful. Gives students practice with the following: tables, charts, and graphs; methods of representing data; statistical concepts; use of coordinate systems; comparison, analysis, and evaluation.

Greenes, Carole, Linda Schulman, Rika Spungin, Suzanne Chapin, and Carol Findell, *Mathletics*, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. Written for students of varied skill levels, the problems involve arithmetic, algebra, combinatorics, geometry, logic, number theory, probability, and statistics. Also included is a complete solution emphasizing the problem-solving strategies used for each problem. Grades 7-10.

Harnadek, Anita, *Classroom Quickies*, grades 6-12, 1991, Midwest Publications, Critical Thinking Press and Software, P.O. Box 448, Pacific Grove, CA 93950, 1-800-458-4549. Three-book series of classic mathematics and logic teasers.

Harnadek, Anita, *Critical Thinking Activities for Mathematics* (grades 3-12,) 1991, Midwest Publications, Critical Thinking Press and Software, P.O. Box 448, Pacific Grove, CA 93950, 1-800-458-4549. This series presents many kinds of problems—some mathematical and some containing no math at all. Both help students develop critical thinking skills. Although specific grade levels are specified, the material itself is nongraded and may be used for remediation purposes as well.

Hayden, Jerome, and Howard Davis, *Fundamental Mathematics for Health Careers*, 1991, Delmar Publishers, Two Computer Drive, West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707. Practical math application through Health careers. Best features include good simple problems from "real world" situations; however, there are not enough problems at a more advanced level that relate math to health occupations. The book would work well as a supplemental text for problem development.

High School Subject Tests, Forms A and B, Comprehensive Assessment Program, Mathematics, American Testronics, 1-800-553-0030.

Hildegrand, Francis, and Donna Kay Buck, *Learning the Graphics Calculator*, Grades 6-12, 1991, Midwest Publications, Critical Thinking Press and Software, P.O. Box 448, Pacific Grove, CA 93950, 1-800-458-4549. Step-by-step tasks result in graphic designs which motivate students to problem solve using calculators.

Huth, Harry C., *Practical Problems in Mathematics for Carpenters, 5E*, 1991, Delmar Publishers, Two Computer Drive, West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707. Featuring applied math problems for carpenters, the book contains many problems related to mathematics that are used in "real world situations," and the graphics are excellent. This would work well as supplemental material in a lab situation; however, there is a lack of advanced math problems.

Integration of Math and Science into Technology Education, Workbook, Extension Instruction & Materials Center, University of Texas at Austin, P.O. Box 7218, Austin, TX 78713-7218, 1-800-252-3461. Presents projects that show math and science relationships to technology education. Could be used as a resource for "theme" project ideas.

Integration of Mathematics, Science, and Language Arts Principles in the Home Economics Curriculum, Teacher's Guide, 1991, Home Economics Curriculum Center, Texas Tech University, Box 41161, Lubbock, TX 79409-1161, 806-742-3029. Reviews fundamental principles of mathematics, science, and language arts and suggests learning and evaluation experiences that reinforce academic principles within specific home economics content areas.

Iowa Algebra Aptitude Test: Fourth Edition, 1992, The Riverside Publishing Company, 2550 Beckleymeade Avenue, Suite #135, LB-14, Dallas, TX 75237, 214-780-7294. Designed to meet new NCTM Standards. Written to assess student readiness for Algebra 1; covers grades 7/8; suitable for high school or junior college testing. It contains four subtests: measuring pre-algebra skills in interpreting graphs and written mathematical information; translating word problems into algebraic or equuation form; identifying functions; and using symbols.

Integrated Lesson Plans for Trade and Industrial Education, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Lesson plan modules contain plans in four academic areas: language arts, mathematics, science, and social studies. Each plan references both academic and T&I essential elements. Also included is a matrix which references TAAS objectives.

Johnson, R. T., D. W. Johnson, and E. J. Holubec, Eds., *Structuring Cooperative Learning: Lesson Plans for Teachers* Interaction Book Company, Edina, MN, 1987. Features cooperative learning lesson plans by teachers who have used that process in their classrooms; also provides sample lessons for grade levels K-12 and various subject areas, including reading, language arts, mathematics, science, and social studies. Reproducible with some restrictions.

Kulm, G., Ed., 1988, *Assessing Higher Order Thinking in Mathematics*, Washington, DC, American Association for the Advancement of Science.

London, Robert, *Nonroutine Problems*, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. This supplementary set of nonroutine problems provides a problem-solving component for use in second-semester Algebra II and post-Algebra II classrooms. This resource improves students' verbal, writing, as well as problem-solving skills while they develop and report on their solutions.

Manipulative Mathematics. Contact, Rosemarie Dyer, Teacher, Margaret Black Elementary, 14100 Heritage, Sterling Heights, MI 48312, 313-825-2840, FAX: 313-294-8438. James Callaghan, co-facilitator.

Marion, Nino, *Math for Welders*, Goodheart-Willcox Company, Inc., 123 W. Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440. A combination textbook and workbook which teaches basic mathematics skills and provides practical exercises useful in the welding field. Covers six areas of instruction including Whole Numbers, common fractions, Decimal Fractions, measurement, percentages, and Metric System.

Mathematical Thinking Activities for Student Groups, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Activity cards stimulate student to think, talk, draw, and do a variety of entertaining word problems, puzzles, experiments, and discovery activities. Grades 6-9.

Mathematics and Medicine, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. Powerful tools used daily by medical professional are introduced in this module. Applies statistical indices and uses elementary probability as tools for medical decision-making. A very interesting presentation of mathematical techniques in use saving lives and improving medical care.

Mathematics for Horticulture, 1982, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Presents basic math skills in the context of horticulture. Covers math for garden center sales, landscape construction, greenhouses and surrounding areas, nursery, arboriculture, and landscape design. Provides numerous exercises and problems.

Mathematics in Daily Living, Workbooks I-IV, 1991, Steck-Vaughn Company, P.O. Box 26015, Austin, TX 78755, 1-800-531-5015, FAX: 512-343-6854. Relates to home economics in that problem-solving applies to all areas of home economics classes; the problem solving techniques present a mathematical way to solve problems. Vocational areas are divided into their specific content areas.

Mathematics Skills, Workbooks, levels 1-6, 1991, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 1-800-531-5015. While the subjects of pre-algebra, algebra, and geometry are covered, the overall context does not relate as well to vocational subjects.

Mathematics Workshop: Problem Solving, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Developing critical thinking skills ensures success in problem solving.

Measurement, Instructor volume and key. Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Applied practice of mathematical skills in vocational settings. Covers linear measurement, units of measurement, and figuring board feet.

Mathematics in Daily Living, Workbooks I-IV, Austin, 1991, Steck-Vaughn Company, P.O. Box 26015, Austin, TX 78755, 1-800-531-5015, FAX: 512-343-6854. Relates to Home Economics in that problem-solving applies to all areas of Home Economics classes; the problem solving techniques present a mathematical way to solve problems. Vocational areas are divided into their specific content areas.

McGlothlin, Martha, *Understanding Math Story Problems*, Pro-Ed 1991 Catalog, 8700 Shoal Creek Boulevard, Austin, TX 78758-6897, 512-451-3246. Series of three workbooks teaches students how to use language to comprehend and solve math story problems and to apply these principles to everyday use. Can be used individually or in groups and include suggestions for both teachers and parents.

Micrometers, Calipers, and Gages, Hobar, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. How to use measuring tools such as micrometers, vernier calipers, thickness gages, and wire gages.

Office Education Lesson Plan Modules, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Contain plans in four academic areas: language arts, mathematics, science and social studies. Each plan references both academic and OE essential elements. Also included is a matrix which references TAAS objectives. Areas developed include: business computer applications; business information processing, microcomputer applications, office administrative systems, and office support systems.

Parsky, Larry, *Math for Employment* and *Math for Food Service Occupations*, 1991, Educational Design Inc., 47 West 13th Street, New York, NY 10011, 1-800-221-9372. These two softcover workbooks deal with basic mathematics and its application to employment. The first helps students relate basic math skills to using money in real situations found in an employment context. The second book focuses on the food service industry, covering a review of math skills and job exploration.

Pauker, Robert A., *Math and Writing 2*, Educators Publishing Service, Inc., 75 Moulton Street, Cambridge, MA 02138-1104, 1-800-225-5750. Focusses on four paragraphing skills:

organizing information, choosing relevant material to support a topic sentence, using transition words within a paragraph, and writing a concluding sentence. Students who use this book should be competent in the following math skills: multi-digit multiplication; long division; addition, subtraction, multiplication, and division of dollars and cents; and percents and their related fractions and decimals. Grades 7-9.

Pauker, Robert A., *Math and Writing* and *Math and Writing 2*, Educators Publishing Service, Inc., 75 Moulton Street, Cambridge, MA, 02138-1104, 1-800-225-5750. For students who are good at math but are reluctant to write, these two books offer practice in important language arts skills. *Math and Writing* concentrates on the sentence, with some attention to short, simple paragraphs. Grades 4 to 8. Math and Writing 2 focuses on four paragraphing skills: organizing information, choosing relevant material to support a topic sentence, using transition words within a paragraph, and writing a concluding sentence. Grades 7 to 9.

Paul, Richard, *Critical Thinking: What Every Person Needs to Survive In A Rapidly Changing World*, Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940.

PEAK: Practical Exercises in Applying Knowledge, Coordinated Occupational Information Netwowrk (COIN), 3361 Executive Parkway, Suite 302, Toledo, OH 43606, 1-800-274-8515. *PEAK* creates job simulations that demonstrate the connection between academic skills and real-life jobs. Sixty different exercises relate Mathematics, science and office and marketing education to today's careers. Each subject includes a teacher's guide.

Phagan, R. Jesse, *Applied Mathematics*, Workbook, 1992. Goodheart-Willcox, 123 West Taft Drive, South Holland, IL 60473-2089. 1-800-323-0440. Aimed at students in vocational fields in particular but students in all fields will learn sound math skills through realistic applications.

Practical Math—Book 1, 2, word problems, 1991, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 1-800-531-5015. This workbook relates to pre-algebra and algebra. Best feature is that some word problems relate to home economics; however, there are more cooking word problems than other areas of home economics which may tend to limit the home economics area.

Proff-Witt, Judy, *Take Time*, Pro-Ed 8700 Shoal Creek Boulevard, Austin, TX 78758-6897, 512-451-3246. A structured, easy-to-administer program to teach time telling using a conventional clock face which is broken down into three level: time telling to the hour; time telling to the 5 minutes, and time telling to the minute. Four major skills are taught: counting numbers around the clock, pairing the short/long hand with the house/minute, telling time reading only one hand (long/short), and telling time reading both hands. Students of any age who have not mastered the skill of telling time would benefit from this program.

Queues, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. This popular module introduces graph theory at a level understandable by anyone with a background in algebra. The book begins with basic definitions and a discussion of the famous Konigsburg bridge problem posed by Euler.

Real Life Activities, workbook, Media Materials Publishing, Department 920301, 1821 Portal St., Baltimore, MD 21224, 1-800-638-2758. Students learn to apply a variety of basic knowledge to the world around them. Includes order forms, coupons, and maps and relates to math, social studies, geography, and social sciences. Interest level: 6-12, Adult.

Real Math, Open Court Publishing Company, Chicago, 1990, 407 South Dearborn, Chicago, IL 60605, 1-800-435-6850. A simple, comprehensive way to present the usefulness of mathematics. Activities are skill-specific, many are game format. Thinking Stories stimulate practical mathematics skills and develop conceptual abilities. Teacher's Resource Books provide a variety of teaching options which include: mental math drills, practice worksheets, enrichment worksheets, lessons to ease transition into Real Math, calculator and computer activities and letters to parents.

Self-Contained Math Manual, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Beginning with the basics of math, these materials were developed using a step-by-step process that takes the student from identifying numbers to figuring their time and pay. Contains 11 units covering numeration, adding whole numbers, subtracting whole numbers, multiplying whole numbers, dividing whole numbers, fractions, decimals, measurement, time and pay, and making change.

Schwartz, Stuart E., *Real-Life Math*, Pro-Ed 8700 Shoal Creek Boulevard, Austin, TX 78758-6897, 512-451-3246. Students learn and reinforce basic arithmetic skills as they deal with personal money management and business transactions. Through a simulated business environment and role playing, students experience the immediate challenges of and need for arithmetic skills. Exploration of vocational interests and familiarization with common personal and business money transactions are also involved. In the simulation activities, students choose and establish their own businesses and carry on financial transactions with a bank, utilities, and other businesses. Transactions include writing checks, invoicing, balancing accounts, interest payments, filing, and many others.

Science, Mathematics, and Technology Education. Contact: Dennis W. Cheek, Coordinator of Curriculum Development, NYSTEP, Rm. 232-M, EB, State Education Dept., Albany, NY 12234.

Shapiro, Edward I., Louis Tapper, *College Entrance Review in Mathematics Aptitude*, Educators Publishing Service, Inc., 75 Moulton Street, Cambridge, MA 02138-1104, 1-800-225-5750.

Helps students prepare for the College Entrance Examination Board Test in Mathematics Aptitude by providing abundant practice exercises, lucid explanations of involved and difficult subject matter, and many tests of increasing difficulty. The book is divided into four parts: Types of Problems; Modern Mathematics; Practice Tests; Representative Tests. Grades 11-12.

Silver, Edward A., Jeremy Kilpatrick, and Beth Schlesinger, *Thinking Through Mathematics: Fostering Inquiry and Communicationion Mathematics Classrooms*, 1991, College Board Publications, Box 886, New York, NY 10101-0886, 212-713-8165.

Sullivan, Richard L., *Practical Problems in Mathematics for Electronics Technicians*, Delmar Publishers, Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707. Contains practical, "real world" problems which apply to math and electronics with good graphical representations. This book would be a good supplemental tool for an Algebra I classroom, even with a reduced amount of advanced math problems.

Student Learning Activities for Applied Basic Skills Series, Extension Instruction Materials Center, University of Texas at Austin, P.O. Box 7218, Austin, TX 78713-7218, 512-471-7716. Covers grades 7 through 12 and features word problems.

Target Math, (Midwest Publications), Critical Thinking Press and Software, P.O. Box 448, Pacific Grove, CA 93950, 1-800-458-4549. Fundamental operations to elementary algebraic equations with game format and several levels of play. Utilizes cooperative learning; fosters problem development.

Torque and Torque Wrenches, (Hobar) Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Defines torque and explains units of torque and torque wrenches.

Trade and Industrial Education Lesson Plan Modules, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Contain plans in four academic areas: language arts, mathematics, science and social studies. Lesson plans, in most cases, require the assistance of academic teachers for producing instructional materials for use with the lesson. Each plan references both academic and T&I essential elements. Also included is a matrix which references TAAS objectives. Areas developed include: automotive tech; auto collision repair; building trades; cosmetology; and drafting.

Vocational Math Pack, Piney Mountain Press, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The back portion is divided into vocational areas and all areas of vocational education are covered. Excellent for integrating. Satisfies requirements of the new Carl D. Perkins

Vocational Act. Develops computational and applied math skills and terminology for vocational students in their specific training area and provides practical job-related math problem-solving.

Vocational Math Supplemental Units, Student volume and key, IML, 1990, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers fractions, decimals, percents, measurement, money, division, formulas, reasoning and problem-solving. Material is designed for the special needs student.

Vocational-Technical Mathematics, 2E, 1991, Delmar Publishers, Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707, Texas 817-780-2222. Integrates mathematics with technical fields and features a diversity of concepts. Excellent possibilities for integration of algebra and vocational fields.

Working With Numbers Consumer Math, Workbook, 1991, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 512-343-8227 or 1-800-531-5015. Offers a refresher course in algebra. Has many problems and examples that could be integrated in lab. Contains real life written problems and demonstrates relationship to math.

Working With Numbers, Workbook Levels 1-6, Austin, 1991, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 512-343-8227 or 1-800-531-5015. A refresher algebra workbook that presents problems and examples that could be used in lab and are real life problems that related to everyday, making this an excellent source for integration material.

Workplace Math: Barber/Cosmetologist by Conover Company, 1990, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Workplace Math: Nurse Aide/Assistant by Conover Company, 1990, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Instructional materials catalogs

1992 K-12 Mathematics Catalog, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 1-800-68-TEACH. Source for math manipulatives, supplementary materials and games.

1992 Mathematics Catalog, Grades 7-12, Holt, Rinehart and Winston, 8551 Esters Blvd., Irving, TX 75063, 1-800-225-5425, FAX: 214-874-6418.

Delmar Publishers Inc. 1992 Catalog, Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Globe Book Company 1992 Catalog Grades 6-12, Globe Book Company, 4350 Equity Drive, P.O. Box 2649, Columbus, Ohio 43216, 1-800-848-9500. Classroom curriculum materials in social studies, language arts, science, and mathematics.

New Strategies for Assessing Mathematics, The Psychological Corporation, Harcourt Brace Jovanovich, Inc., 555 Academic Court, San Antonio, TX 78204-2498, 1-800-228-0752.

Prentice Hall School Division, 1992 Mathematics 6-12 Catalog, Simon & Schuster Education Group, 113 Sylvan Avenue, Route 9W, Englewood Cliffs, NJ 07632, 1-800-848-9500.

Steck-Vaughn Company, P. O. Box 26015, Austin, TX 78755, 1-800-531-5015.

Periodicals, papers, and presentations

Carnegie Commission on Science, Technology and Government, "*In the National Interest: The Federal Government in the Reform of Math and Science Education,*" *T.H.E. Journal*, Vol. 19, No. 7, February 1992, p. 47. Prepared by the commission's Task Force on K-12 Science and Mathematics Education, this report calls for greater federal leadership and offers specific recommendations and insights. (September 1991; paper; free) Carnegie Commission on Science, Technology, and Government, 212-998-2150.

Good, T. L., B. J. Reys, D. A. Grouws, and C. M. Mulryan, "Using Work-Groups in Mathematics Instruction," *Educational Leadership*, Vol. 47, No. 4, December 1989-January 1990, pp. 56-62.

Harrington, Lois G., "Making Common Cause: Integrating Academic and Vocational Studies," National Association of Secondary School Principals, *Curriculum Report*, Vol. 18, No. 1, September 1988. (ED 298 656.)

Journal of Technology in Mathematics, Focusing on research related to the use of existing and future technologies in mathematics research, instruction, and learning, Academic Press, Inc., Journal Promotion Department, 1250 Sixth Avenue, San Diego, CA 92101, 619-699-6742. The journal enables those concerned with technology in mathematics to keep abreast of vital research and information.

Kleiman, Glenn M., "Mathematics Across the Curriculum," *Educational Leadership*, Vol. 49, No. 1, October 1991, pp. 48-51.

Lara, Paul and Michelle Van Winkle, "Opinion: Pro & Con," *The East Texan*, Vol. 57, No. 8, Thursday, October 24, 1991.

"Mathematics in Vocational Education." Oregon State University, Vocational-Technical Education Department, Corvallis, OR: 1982. (ERIC No. ED 221 696)

Willis, Scott, "Mathematics Education: Standards' Revolution' Takes Hold," *ASCD Curriculum Update*, January 1992, pp. 1-7.

Software

Across the Curriculum, 1991-92 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514. Contains everything students need to learn, practice and use four basic computer skills. Book contains 100 lesson plans with reproducible masters for projects in math, language arts, science, and social studies.

Active and Videotape Training Programs, Industrial Training Corporation (ITC), 13515 Dulles Technology Drive, Herndon, VA 22071-3416, 1-800-638-3757. In a study done last year at Perris High School in Perris, California, ITC's Activ (Advanced Concepts in Touch-Interactive Video) interactive videodisc training program was shown to be highly effective in improving the mathematics performances of "at-risk" 9th grade students. The students selected for this program were identified as being two or more years behind their peers academically. Fifty of these at-risk students were involved in the pilot program, and achieved remarkable results using the Activ "Applied Industrial Mathematics" program to apply mathematics skills to simulated workplace situations.

Agricultural Math Tutor Series, AAVIM Vocational Resources Catalog 1992, American Association for Vocational Instructional Materials, 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. A series of programs that help instruct in the solutions of practical farm management problems. A description of appropriate ways to use each math skill is offered and then students are taken through the steps of finding the solutions. Titles: General Agriculture, Beef Production, Crop Production, Agricultural Mechanics.

Alge—Blaster Plus, Computer Direct, Inc., Computer Showroom, 22292 N. Pepper Rd., Barrington, IL 60010, 1-800-289-9473. Helps pre-algebra and algebra students develop an understanding of the algebraic process and learn the basic steps in solving problems. Grade 7-12.

Algebra 1: First Semester, Second Semester, Scholastic Inc., P.O. Box 7502, Jefferson City, MO. 65102, 1-800-541-5513. Provides three ways of learning—by tutorial, by drill and practice, and by testing. Algebra 1 most likely follows the same curriculum tracks and subject-matter development as your textbook. Grades 7-12. Apple.

Algebra Action, Courseware for Algebra 1, Grades 8-11, 1991-1992 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514.

Algebra Concepts, Software for Learning, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-264-2926. Ventura educational system with networking version available. Program helps first year algebra students learn to solve problems by focusing on building an understanding of the underlying concepts of algebra. Features include interactive games; function plot utility; multiple choice quizzes; computer-simulated algebra tiles; and complete database of terms. APL/IBM/MAC.

Algebra Plotter Plus, Graphing, Quizzes, Explorations, Grades 8-11, 1991-1992 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514.

Algebra Plus Volume I, Stone & Associates, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-264-2926. Eight tutorial sessions include arithmetic operations through equations in one variable, using formulas, word problems, and linear equations. Includes testing and glossary of terms. Grades 7-adult.

Algebra Series, Scholastic Inc., P.O. Box 7502, Jefferson City, MO. 65102, 1-800-541-5513. A 7 disk or 10 disk series that resolves major problem areas in teaching algebra.
The 7 Disk Series are entitled:
Equations I;
Equations II
Binomial Multiplication
Factoring Algebraic Expressions
Solving Quadratic Equations (by factoring)
Simultaneous Linear Equations
Graphing Linear Functions

The 10 Disk Series presents three more algebra curriculum areas that students find difficult:
Solving Fractional Equations
Solving Inequalities (solving linear inequalities with one variable)
Equations III
7 Disk Series available in Apple and MS-DOS; 10 Disk Series available in Apple.
Grades 8-12.

Algebra Word Problem Series, Scholastic Inc., P.O. Box 7502, Jefferson City, MO. 65102, 1-800-541-5513. Help your students translate word problems into algebraic equations. Students deal easily with problems by breaking them down into small units, utilizing a box grid or diagram. Seven disk series. Grades 8-12. Apple.

Applied Mathematics Program (AMP), 1991, Piney Mountain Press, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Provides the instructor with an effective tool for integrating basic academic skills into the vocational curriculum. Used with both vocational and academic instructors, AMP provides the teacher with a means of assessing, instructing, and testing math skills directly applied to specific occupational training programs. Provides a computerized prepost test that diagnoses the student's math abilities. A prescription is then automatically generated which ties the student's performance to applied math activities in the workbook. After completing assigned activities in the workbook, the computer generates test items which the student may take on the computer or on paper. Finally, the program compares, saves, and prints the student's pre and post test results. Contents: six diskettes, guide, workbook, and site license each.

Beginning Algebra, Dinosoft, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-264-2926. Students learn about positive and negative integers, algebraic statements and variables. Through graphic representations, students are able to understand the concepts of beginning algebra. Grades 7 and up.

Buck, Donna Kay, and Francis Hildebrand, Math-O-Graphs: Critical Thinking Through Graphing, 1990, (Midwest Publications), Critical Thinking Press and Software, P.O. Box 448, Pacific Grove, CA 93950, 1-800-458-4549.

CCC Instructional System, Computer Curriculum Corp., Simon & Schuster Education Group, 1701 West Euless Blvd., Suite 139, Euless, TX 76040, 1-800-772-7177. Computer Curriculum Corporation (CCC) has researched and produced computer-assisted instruction that has achieved outstanding results. This instruction can be delivered in a system of networked microcomputers or in a SOLO unit. Programs are available in math, reading and language skills.

Computational Skills Program, Grades 1-12, Bryce Shaw and Richard Monnard, 1991-1992 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514. Whole Numbers, Fractions, Decimals, Rates, Ratios, Proportions & Percents.

Compute-A-Match incorporates S.A.G.E. and J.O.B.S. II systems, Pesco International, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Meets and exceeds all state and federal requirements for classifying jobs in performing matches. Extremely comprehensive and time efficient and an excellent aid to vocational guidance.

Coordinate Geometry, Software for Learning, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-264-2926. Ventura educational system with networking version available. Students gain an understanding of Coordinate Geometry through interactive tutorials and guided experiments. Topics include: abscissa and ordinate; defining a locus; and, equation of a line. APL/MAC.

Dream House Professional, Computer Direct, Inc., Computer Showroom, 22292 N. Pepper Rd., Barrington, IL 60010, 1-800-289-9473. The quickest and easiest floorplan drawing program available today. Among the program's many features are accurate footage calculation, automatic dimensioning, room labeling, grid overlay and the ability to change the size of your drawing. 256 K required. 5.25".

EduCalc, Grades 7-12, 1991-1992 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514. Introductory spreadsheet tool available for math, science and social studies. Contains dozens of applications to help students practice spreadsheet skills while exploring and analyzing new information.

Edwards, Ronald, program by Eric Thornton, Target Math, 1991, (Midwest Publications) Critical Thinking Press and Software, P.O. Box 448, Pacific Grove, CA 93950, 1-800-458-4849. Fundamental operations for elementary algebraic equations. Features game format with several levels of play and utilizes cooperative learning as well as fostering problem development.

Eighth Through Tenth Grade Math Competencies, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. All programs available in Apple II AD9005/ProDos APD9005/MS-DOS IB9005. Suitable for use with mainstreamed students and students with emotional disturbances, learning disabilities, hearing impairments, visual impairments, and/or physical disabilities.

Every Day Mathematics. 1991, Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 1-800-445-1088. Subject matter covers vocational curriculum and essential elements as they relate to basic courses. Offers a variety of information and is excellent in both scope and sequence. Offers excellent possibilities for integration in the algebra field and vocational courses, especially as the program would improve computer literacy in all fields.

Everyday Mathematics Problem-solving Microlab, DEGEM Systems Ltd., Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 1-800-445-1088. Part of the SciTech Libraries of high-quality educational software. Deals with applied math problems. Features tutor, feedback, is self-paced and flexible. A drawback is that it needs "VGA" for color; has CGA for black and white only. Presents applications of math which make it ideal for integration purposes.

Exact Dimensions, AAVIM Vocational Resources Catalog 1992, American Association for Vocational Instructional Materials, 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. A fast entry worksheet system allows students to add, subtract, multiply, and divide any combination of feet/inch/fraction, decimal inch, or meter measurements. Program is designed for teaching architecture, carpentry, cabinet making, drafting, contracting, and engineering.

Excelling in Mathematics, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. MS-DOS series of tutorial math programs designed to provide instruction for above average math students and prepare them for college mathematics. Each program contains a pre-test and post-test section to evaluate mastery of a subject. Teacher's guide and student manual also included. Suitable for us with mainstreamed students and students with emotional disturbances; learning disabilities; physical disabilities and/or hearing impairments.

Fraction Munchers, Scholastic Inc., P.O. Box 7502, Jefferson City, MO. 65102, 1-800-541-5513. In four different games, students search for types of fractional numbers, equivalent fractions, expressions using fractions, and comparisons of fractions. The management option allows teachers to decide which games students may play. Teachers may also adjust the educational values of each game. Apple 5.25". Grades 3-12.

Geometry Concepts, Software for Learning, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-264-2926. Ventura educational system with networking version available. Helps students overcome difficulties with geometry and build a strong foundation for learning more advanced concepts. Topics include: Basic Concepts; Angles and Triangles; Circles; Area and Perimeter; Planar Figures; and, Solid Figures. APL/IBM/MAC.

The Hands-On Math Series, Volume 1, Software for Learning, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-264-2926. Ventura educational system with networking version available. Computer simulated math manipulatives. Volume 1 includes: Colored Rods, Number Tiles, Counters, Chip Trading, Geoboard, and Tangrams. APL/IBM/MAC.

High School Math Competency Series, Scholastic Inc., P.O. Box 7502, Jefferson City, MO. 65102, 1-800-541-5513. A remarkable series of programs on a single disk. May be used for drill and remediation in the basic math skills, or specifically for remediation in preparation for the Regents Competency Test in mathematics. In-depth coverage of the following areas: whole numbers, fractions, decimals, basic percent, primes and factors, integers, algebra, geometry, ratio and proportion, probability, statistics, percent word problems, and money problems. Worksheet Generator, a program correlated to the High School Competency Series, lets you easily create and print individualized worksheets or reproducible worksheet masters for the entire class. Grades 9-12. Apple.

J.O.B.S. II: The On-Site Computerized D.O.T. Management System with Optical Scan Data Entry and Test Scoring Capabilities, Pesco International, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Gives the user the ability to update their copy of the D.O.T. as changes are made; track client performance on competencies or tasks; match clients to occupational courses and curriculum by year—required courses and recommendations on math and language based on stanines.

Maple V for the Macintosh, Waterloo Maple Software, Waterloo, Ontario, Canada, 519-747-2373. Refer to "Macademic: Interactive Algebra Pkge. has 3D Graphics," in *T.H.E. Journal*, Vol.19 No. 7, February 1992, p. 60. A completely new version of an interactive algebra system.

Math Blaster Mystery!, Computer Direct, Inc., Computer Showroom, 22292 N. Pepper Rd., Barrington, IL 60010, 1-800-289-9473. Develops problem-solving skills, logical thinking skills, and strategies for solving word problems. Grades 5-12.

Math Climbers II, Computer Direct, Inc., Computer Showroom, 22292 N. Pepper Rd., Barrington, IL 60010, 1-800-289-9473. Race up sets of ladders to keep you ahead of the Math Monster. Math problems involving fractions and decimals in questions of addition, subtraction, multiplication, division and algebra. Requires IBM PC, XT, AT or 100 % compatibles with 256K, 5.25".

Math on the Job, Careers, Inc., 1211 10th St., S.W., P.O. Box 135, Largo, FL 34649-0135, 1-800-726-0441. Allows special needs and at-risk students an opportunity to explore careers and practice basic skills related to their exploration experiences, and provide diagnostic and remedial occupationally related skills information. Students discover how various math concepts and skills are used in occupations, apply these skills in the performance of selected tasks, and consider the education and training requirements for selected occupations.

Mower Store (Version 2.0), Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. A computer software package designed to provide practical application of spreadsheet skills. Simulates six months of store operation and will take two to three weeks of class time. Apple, IBM or MAC; variable disk size.

New Grolier Electronic Encyclopedia, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. The 1991 edition includes all 21 volumes, 33,000 articles and 10 million words of the Academic American Encyclopedia. Includes thousands of color and b/w pictures, maps, and sounds. Requires headphones or speakers connected to CD-ROM for sound. PC version requires VGA for pictures. Optional Teacher's Guide includes four sections: Literature/Language Arts, History/Social Studies, Science/Math, and Reference Skills. With answer key, tips and reproducible masters. MAC and PC.

New Math Blaster Plus!, Computer Direct, Inc., Computer Showroom, 22292 N. Pepper Rd., Barrington, IL 60010, 1-800-289-9473. Jump on the launch pad an get ready to blast off with a payload of cosmic new activities, graphics and sound effects that are out of this world! Ages 6-12.

Precalculus Plotter Plus, Software for Graphing and Exploring, Grades 10-12, 1991-1992 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514.

Prevocational Math, AAVIM Vocational Resources Catalog 1992, American Association for Vocational Instructional Materials, 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Series titles include: Whole Numbers; Decimals; Fractions; and Improper Fractions. Whole Numbers covers basic math skills used in the workplace and everyday life. Decimals uses story problem scenarios with sequential lessons increasing in complexity. Fractions is presented in everyday and job-oriented situations. Improper Fractions incorporates the principles of math computations with improper fractions. Illustrated tutorial packages. Apple and IBM-PC.

The Quarter Mile, Version 4.0, Barnum Software/Stone & Associates, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-264-2926. Available in four parts: Whole Numbers!; Fractions!, Decimals & Percents!, and, Integers & Equations! As each correct answer is given, student's dragster accelerates and is racing against exact video replays of previous best races. Lanes scroll faster as the six dragsters accelerate with screeching tires and smoking, screaming engines. Average Grade 4-Adult. APL/IIGS.

Reading A Ruler: English Measurements, AAVIM Vocational Resources Catalog 1992, American Association for Vocational Instructional Materials, 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Students learn how to read a ruler through use of graphics, sound, and easy-to-read text. Three lessons on three copyable disks and reproducible quizzes. Apple and IBM-PC.

Scholastic Computers & Math, Scholastic Inc., P.O. Box 7502, Jefferson City, MO. 65102, 1-800-541-5513. A lively, step-by-step approach shows students how to apply the computer and basic math concepts to a variety of problems. Problem-solving skills are developed through carefully sequenced math topics, immediate application of new ideas, real rather than contrived problems, and appropriate computer usage. System Requirements: Apply—64K. The text can also be used with Commodore 64K, TRS-80 Models 3 and 4, and IBM PC and PCjr. Grades 7-12.

Survival Math: Math We Must Know, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Upon completion of these units, students will be able to use the mathematical skills involved in addition, subtraction, multiplication, division, fractions, decimals, and percents. Suitable for us with mainstreamed students and students with: mild mental retardation; hearing impairments; speech/language disabilities; physical disabilities; learning disabilities; and/or traumatic brain injury.

Testmaster II and Textmaster II, Lovesoft Educational Sottware, Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 713-465-9793. Two complete, user-friendly, menu-driven, testing/grade management systems for the Apple II. Each Data Package contains a varying number of modules. Each module includes three copyable, modifiable, and bootable student disks: Test; Text; and Review. A hardcopy of the Test, Answer Key, and Text disks is provided along with any required worksheets.

TLTG Math for Science, TLTG, Texas Association of School Boards, P.O. Box 400, Austin, TX 78767-9820. Program goals: For individual students who are experiencing difficulty in the math-based components of a physical science course. While mathematical principles relevant to physical science concepts are reviewed, it is not the intent of the program to teach math. Instead, the focus is on showing students the relationship between math and science. Each lesson includes several activities. approximately 10-15 minutes in duration. The program is an excellent bridge for those wishing to integrate the study of the two disciplines. Hardware requirements (minimum), Computer, Monitor, Videodisc player, Input device.

Using Geometry Grapher, Coordinates and Transformations, Grades 9-11, 1991-92 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514.

Vocational Math for Automotive Technicians, AAVIM Vocational Resources Catalog 1992, American Association for Vocational Instructional Materials, 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Diagnostic and teaching program of math used by automotive technicians including 80 practical multiple choice problems in set of 20.

Vocational Math For Carpentry, AAVIM Vocational Resources Catalog 1992, American Association for Vocational Instructional Materials, 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Diagnostic and teaching program of math used by carpenters including 80 practical multiple choice problems in sets of 20. Related to actual on the job situations. Apple and IBM-PC with graphics card.

Whats My Angle?, Computer Direct, Inc., Computer Showroom, 22292 N. Pepper Rd., Barrington, IL 60010, 1-800-289-9473. Students using game format learn geometry by helping A.J. Astronaut, Rosa the Rock Star and other colorful characters find the answers. Includes five engaging activities covering a full year of geometry.

Word Problems in Math 1, 2, 3, Scholastic Inc., P.O. Box 7502, Jefferson City, MO. 65102, 1-800-541-5513. Interactive tutorials turn work problems into simple math mastery. Apple 5.25" and MS-DOS 5.25". Grades 3-12.

Software catalogs

1992 Catalog, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-624-2926. Excellent source of software and CD-Rom/Laser discs. Covers all facets of rapidly advancing technology.

1992 Radio Shack Educational Products Guide, SchoolMate Software, Tandy Corporation/Radio Shack, 1600 One Tandy Center, Ft. Worth, TX 76102, 817-390-3091.

BLS Inc., Tutorsystems 1990 Basic Skills Tutorial Software, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252. Adult Education, Grade School, Junior, Senior High, Remedial Skills for All Ages.

Computer Direct, Inc., Computer Showroom, 22292 N. Pepper Rd., Barrington, IL 60010, 1-800-289-9473. Source for IBM Compatible computers, software and accessories.

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

MECC Education catalog 1991-92, 6160 Summit Drive North, Minneapolis, MN 55430-4003, 1-800-685-MECC. Innovative and comprehensive programs in educational technology. Apple II and IBM.

Vocational Education Software & Videos Catalog, Piney Mountain Press, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Many software programs and applied lessons for math, including Workplace Math Complete Series. Language Arts

Videos

Long, Thomas, *Basic Mathematics Skills and Vocational Education, 1980.* Center on Education and Training for Employment, The Ohio State University, 1900 Kenny Road, Columbus, OH 43210, 1-800-848-4815.

Applied Mathematics, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 512-343-8227 or 1-800-531-5015. Consists of a video tape and workbook with material divided by vocational subject areas. Math is made relevant by demonstrating how it is used in the workplace and through hands-on problem-solving.

Fractions, Decimals and Percentages, Career Publishing, Inc., 910 N. Main Street, Orange, CA 92613-5486, 1-800-854-4014. Middle and high school students who need a brush-up in fractions, decimals, or percentages will benefit from these intensive reviews.

It's a New World, Wisconsin Career Information System, 1078 Educational Sciences Unit I, 1025 West Johnson Street, Madison, WI 53706, 1-800-442-4612. Encourages middle/high school students to consider the importance of mathematics and science in their future. Includes a teacher's guide and suggests ways to utilize other career development and math or science activities. 40 minute VHS.

Math for Health Professionals, Career Publishing, Inc., 910 N. Main Street, Orange, CA 92613-5486, 1-800-854-4014. Designed for health professionals who need to learn the techniques used to calculate dosages for the administration of medications.

The Mechanical Universe...and Beyond, The Annenberg/CPB+ Project, c/o Intellimation, Attn: Science Dept., P.O. Box 1922, Santa Barbara, CA 93116-1922, 1-800-LEARNER. This introduction to physics provides students with interaction of ideas from Aristotle to Einstein. Developed for both the novice and physics student, *The Mechanical Universe* is a flexiable, highly effective teaching tool for physics, engineering, and math curricula. *The Mechanical Universe...and Beyond* consists of two parts, each with 26 half-hour programs on 13 videocassettes. The complete series may be purchased in VHS format. Also available on videodisc which offers an even more flexible resource for lectures. Each of the 26 double-sided, 12" discs includes a visual index. Chapter stops let you identify and find key sequences, such as lab experiments or animations of abstract theories.

Not Knot, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. The computer animation guides your journey into hyperbolic space as it describes the complement of certain knots. also contains background information on the history of knot theory, mirrors, and hyperbolic geometry. Great for math clubs, projects, and math classes. 20 minutes. Secondary level.

Why Study Math?, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. This program uses on-the-job work scenes to show that even the simplest job behavior requires math-related skills. When your students start to moan and groan about why they have to study math, show them this very powerful, motivating learning tool. One 26-minute videocassette, reproducible worksheets.

"Your Educational Skills: Don't Leave Home Without Them," VAP Foundation, 23 Meadow Drive, Camp Hill, PA 17011-8331, 717-761-3381. Stresses that most students do not connect what they have learned in high school with future occupational success. This new 20-minute video casette helps bridge that gap by illustrating how math, language, and reasoning competence is needed in the fifty fastest growing jobs in the United States.

Video catalogs

Curriculum-Based Programs 1991-92 Catalog of Audio-Visual Instructional Programs, United Learning, Inc., 6633 W. Howard St., Niles, IL 60648, 1-800-759-0362.

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Science

Books

Harms, N. C., *What the Research Says to the Science Teacher, Vol. 3,* University of Colorado, 1981.

Kulm, G. and S. Malcom, Eds., *Science Assessment in the Service of Reform,* American Association for the Advancement of Science, Washington, DC,1991.

O'Neil, John, *Raising Our Sights, Improving U.S. Achievement In Mathematics and Science,* Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH.

Woolnough, B., Ed., *Practical Science,* Open University Press, Philadelphia, PA,1991.

Instructional Materials

Applied Basic Skills Series: Mathematics, Science, and Language Arts, Book and Student Learning Activities, 1988, Extension Instruction Materials Center, University of Texas at Austin, P.O. Box 7218, Austin, TX 78713-7218, 512-471-7716, or 1-800-252-3461. This series features math word problems from grades 7 through 12 and is designed to motivate and encourage academically disadvantaged students to learn the basics by using practical life skills as a vehicle for learning. Focuses on real-life application, with information on career awareness and consumer education. Covers most of the essential elements for 7th through 9th grade math, science, and language arts. Includes cross-references to TAAS and TEAMS objectives, where appropriate. May be used for integration purposes in careers and industrial applications fields.

Applied Biology/Chemistry, 1991, Center for Occupational Research and Development (CORD), 601 Lake Air Drive, Suite C, Waco, TX 76710, 1-800-231-3015. High school course that uses an applications-oriented, hands-on approach to teach biology and chemistry. ABC employs student activities that relate to work and other common experiences, and uses video as an effective motivational and information medium. Targets mid 50% of vocational students and science-certified teachers if taught for science credit, home economics, agriculture, health, and technology teachers if infused or taught for vocational credit.

Applied General Education Through Technology Education, Guide, 1991, Extension Instruction Materials Center, University of Texas at Austin, P.O. Box 7218, Austin, TX 78713-7218, 512-471-7716, or 1-800-252-3461. Comprehensive curriculum guide introduces teachers to an interdisciplinary approach for technology, education, language arts, math, science, and social studies. Modules contain individualized lesson plans for each discipline with activities designed to provide an applied problem-solving learning experience for all students, centered around a common theme. The disciplinary concepts are tied together by an overlapping timetable to provide easy application and transfer of learning for students and optimum teachability for teachers.

Applied Physics Problem-solving Microlab, DEGEM Systems Ltd., Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 1-800-445-1088. This is part of the SciTech Libraries of high-quality educational software and deals with complete physics curriculum. Features tutor, feedback; is self-paced and flexible. Presents problem that deals with real-life situation. Solution is brought about by student using information center, equations, and computer center.

Astronomy, ECS Learning Systems Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. This kit includes tasks dealing with the following categories: The planets, our moon, asteroids, comets & meteors, the stars, and celestial phenomena. Grades 4-12.

Basic Science for Living, 1991, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 512-343-8227, or 1-800-531-5015. Gives brief individual lessons on energy, heat, magnetism, electricity, light, sound and matter. High concepts are given in easy-to-read concepts. The possibilities for integration are many since there are many crossovers between the science fields and the vocational education fields.

BASIC Surveying Techniques, MAVCC, 1987. Educational Development and Training Center, East Texas State University, Commerce, TX 75429, 1-800-886-EDTC, FAX: 903-886-5744. Provides surveying students with information and hands-on application for taking horizontal, vertical, and angular measurements for various types of surveying.

Christensen, John W., *Global Science,* Third Edition, Kendall/Hunt Publishing Company, 2460 Kerper Boulevard, P.O. Box 539, Dubuque, Iowa 52004-0539, 1-800-258-5622, 1992. Integrates chemistry, biology, physics, and earth science.

Cranial Creations: 45 Cooperative Learning Activities for Life Science Classes. ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Integrates cooperative learning and critical thinking exercises in a cross-disciplinary approach. Concepts such as comparative anatomy, genetics and ecology are explored while using math, writing, art, and language arts. Grades 7 and up.

Designing District Evaluation Instruments for Math and Science Process Skills. (ASCD Network, *ASCD Update,* Vol. 34, No. 1, January 1992, pp. 4-5.) Contact Shelly Lipowich, Math/Science Consultant, 6321 North Canon del Pajaro, Tucson, AZ 85715; Tel.: 602-299-9583; FAX: 602-886-2370.

Developing Critical Thinking Through Science, (Midwest Publishers), Critical Thinking Press and Software, P.O. Box 448, Pacific Grove, CA 93950, 1-800-458-4849. Contains many hands-on lab activities with questioning strategies. Excellent possibilities exist for integration between vocational classes and the physical sciences.

Documentation of Core Competencies and Key Skills, IML, 1989, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Competencies correlated to home economics in language arts, science, mathematics, and social studies to prepare students for successful and productive employment.

Entomology, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers introduction to entomology, insect collection and identification, methods of chemical and non-chemical control, safe use of insecticides, and integrated pest management.

Entomology Identification Slides IML, Revised 1991, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Color slides showing all insects to be identified in the entomology contest. Excellent for teaching insect identification and control measures in fruit and vegetable and crop production.

Farmer, Walter A., Margaret A. Farrell, and Jeffrey R. Lehman, *Secondary Science Instruction*, Janson Publications, Inc., P.O. Box 6347, Providence, RI 02940, 1-800-322-MATH. The parallel science methods text to *Secondary Mathematics Instruction*. Balanced in its integration of research, theory and practice. Addresses the goals of 2061 with its active hands-on and problem solving approach to teaching and learning.

Gardner, Robert, *Investigate and Discover*, Silver Burdett Press, Inc., P.O. Box 1226, Westwood, NJ 07675-1226, 1-800-843-3464. Published in association with the Franklin Institute Science Museum. Series expands middle-graders' understanding of the methods scientists use by presenting a wealth of informative and fun-to-try experiments that are done easily at home. Grades 7-above.

Haber-Schaim, Uri, John H. Dodge, Robert Gardner, and Edward Shore, *PSSC Physics*, Seventh Edition, Kendall/Hunt Publishing Company, 2460 Kerper Boulevard, P.O. Box 539, Dubuque, IA 52004-0539, 1-800-258-5622, 1992. Software available for diagnostic analysis of PSSC tests.

Handbook Two for Aerospace Education: A Guide to Projects and Applications, Edited by John Paul Rossie, Director, Aerospace Educational Development Program, 1991, Praaken Publications, Inc. P.O. Box 8623, Ann Arbor, MI 48107. This handbook is the second in a series of publications for aerospace education. The first handbook is a guide for working through the start-up phase for aerospace education programs, as well as a listing of available aerospace educational resources. The focus of this second handbook provides a vehicle that can be taken directly into the classroom or whatever group that has gathered to enjoy the challenge of learning. The second volume provides material of a more conceptual nature. The range of topics and age-group applicability is broad.

Heredity and Genetics, ECS Learning Systems Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Tasks center around the following strands: The ABC's of Genetics, DNA, Heredity & Environment, Genetic Disorders, and Genetic Engineering. Grades 4-12.

High School Subject Tests, Forms A and B, Comprehensive Assessment Program, Science, American Testronics, 1-800-553-0030.

Integration of Math and Science into Technology Education, Workbook, Extension Instruction & Materials Center, P.O. Box 7218, Austin, TX 78713-7218, 1-800-252-3461. Presents projects that show math and science relationships to technology education. Could be used as a resource for "theme" project ideas.

Integration of Mathematics, Science, and Language Arts Principles in the Home Economics Curriculum, Teacher's Guide, 1991, Lubbock, Home Economics Curriculum Center, Texas Tech University, Box 41161, Lubbock, TX 79409-1161, 806-742-3029, FAX: 806-742-30334. Reviews fundamental principles of mathematics, science, and language arts and suggests learning and evaluation experiences that reinforce academic principles within specific home economics content areas.

Integrated Lesson Plans for Trade and Industrial Education, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX (903) 886-5744. Lesson plan modules contain plans in four academic areas: language arts, mathematics, science, and social studies. Each plan references both academic and T&I essential elements. Also included is a matrix which references TAAS objectives.

Johnson, R. T., D. W. Johnson, and E. J. Holubec, Eds., *Structuring Cooperative Learning: Lesson Plans for Teachers 1987*, Interaction Book Company. Edina, MN, 1987, Features cooperative learning lesson plans by teachers who have used that process in their classrooms; also provides sample lessons for grade levels K-12 and various subject areas, including reading, language arts, mathematics, science, and social studies. Reproducible with some restrictions.

Kelly, James L., Alan R. Orr, Barbara W. Saigo, and Roy H. Saigo, *Biology: A Personalized Approach*, Kendall/Hunt Publishing Company, 2460 Kerper Boulevard, P.O. Box 539, Dubuque, IA 52004-0539, 1-800-258-5622. Structured pacing allows the teacher to set the tempo for study and offer individualized attention to students with varied learning abilities.

Matt, Stephen R., *Electricity and Basic Electronics*, text and workbook, Goodheart-Wilcox Co., Inc., South Holland, IL, 1992. 123 West Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440, FAX: 708-333-9130. Revised introductory text adds topics on superconductivity material, fiber optics, and relays. Also features basic theory and fundamentals of electricity and electronics as well as projects with construction procedures.

National Assessment of Educational Progress, "The Science Report Card Elements of Risk and Recovery", *ASCD Update*, Vol. 30 No. 8, November 1988, p. 2. Available for purchase from NAEP, P. O. Box 6710, Princeton, NJ 08541.

O'Neil, John, *Raising Our Sights: Improving U.S. Achievement in Mathematics and Science*, Issues Analysis, Association for Supervision and Curriculum Development (ASCD), 1250 N. Pitt Street, Alexandria, VA 22314, 703-549-9110.

Oceanography, ECS Learning Systems Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Tasks center around the following stands: Marine Biology, Geological Oceanographer and Physical Oceanography. Grades 4-12.

Office Education Lesson Plan Modules, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX (903) 886-5744. Contain plans in four academic areas: language arts, mathematics, science, and social studies. Each plan references both academic and OE essential elements. Also included is a matrix which references TAAS objectives. Areas developed include: business computer applications; business information processing; microcomputer applications; office administrative systems; and office support systems.

Paul, Richard, *Critical Thinking: What Every Person Needs to Survive In A Rapidly Changing World*, Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940.

PEAK: Practical Exercises in Applying Knowledge, Coordinated Occupational Information Network (COIN), 3361 Executive Parkway, Suite 302, Toledo, OH 43606, 1-800-274-8515. PEAK creates job simulations that demonstrate the connection between academic skills and real-life jobs. Sixty different exercises relate mathematics, science, and office and marketing education to today's careers. Each subject includes a Teacher's Guide.

Plant Genetics and Crop Breeding, 1990, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Series of three booklets on plant genetics: "Plant Reproduction and Heredity," "Plant Life Cycles and Breeding" and "Crop Breeding: Tomato."

Plant Growth and Development, 1989, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Revised manual presents plant growth and development in field crop production. Emphasizes major agronomic crops: corn, soybeans, and small grains. Describes plant growth processes such as germination, seedling growth, absorption, photosynthesis, respiration, transpiration, and reproduction.

Plant Science Unit, IML, 1991, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465. Revised unit covers the importance of plants, classification of plants, plant growth factors, weeds, diseases, insects, germination, photosynthesis, respiration, sexual and asexual reproduction, and plant genetics.

Science, Mathematics, and Technology Education. Contact: Dennis W. Cheek, Coordinator of Curriculum Development, New York State Department of Education, Rm. 232-M, EB, State Education Dept., Albany, NY 12234.

Science for All Americans, American Association for the Advancement of Science, 1989, AAAS Books, Department 2061, P.O. Box 753, Waldorf, MD 20604, Project 2061, the multi-year effort of the American Association for the Advancement of Science to upgrade science education, completed its first phase with the publication of Science for All Americans. The panel reports—Biological and Health Sciences, Mathematics, Physical and Information Sciences and Engineering, Social and Behavioral Sciences, and Technology are sold separately, or the set may be purchased.

Stone, Jody Hines, James L. Kelly, Paul E. Rider, Sr. and Alan R. Orr, *SPICE: Structured Pacing in Chemistry Education*, Kendall/Hunt Publishing Company, 2460 Kerper Boulevard, P.O. Box 539, Dubuque, IA 52004-0539, 1-800-258-5622. Student-centered chemistry program that encourages active participation in the learning process. All concepts reinforced by laboratory work in a hands-on environment that requires active learning.

Trade and Industrial Education Lesson Plan Modules, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX (903) 886-5744. Contain plans in four academic areas: language arts, mathematics, science and social studies. Lesson plans, in most cases, require the assistance of academic teachers for producing instructional materials for use with the lesson. Each plan references both academic and T&I essential elements. Also included is a matrix which references TAAS objectives. Areas developed include: automotive tech; auto collision repair; building trades; cosmetology; and drafting.

Zipko, Stephen J., *Toxic Threat: How Hazardous Substances Poison Our Lives*, Silver Burdett Press, Inc., P.O. Box 1226, Westwood, NJ 07675-1226, 1-800-843-3464. Provides thorough and current information on the major toxic substances that threaten our lives—how they get into our environment, what harm they do, and how young people can help control the flood of toxins in their lives. Grades 7-above.

Instructional materials catalogs

1992 Science Catalog, Grades 6-12, Holt, Rinehart and Winston, 8551 Esters Blvd., Irving, TX 75063, 1-800-225-5425, FAX: 1-800-874-6418.

Delmar Publishers Inc. 1992 Catalog, Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC.

Globe Book Company 1992 Catalog Grades 6-12, Globe Book Company, 4350 Equity Drive, P.O. Box 2649, Columbus, OH 43216, 1-800-848-9500. Classroom curriculum materials in social studies, language arts, science, and mathematics.

Steck-Vaughn Company, P. O. Box 26015, Austin, TX 78755, 1-800-531-5015.

Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 713-465-9793, or 1-800-445-1088. Contains information concerning:
PN-2000 Computerized training lab for Pneumatics and Pneutronics;
AT-2000 Computerized Training Lab for Automotive Technologies and Autotronics;
EB-2000 Computerized Training Lab for Basic and Advanced Electronics;
PT-2000 Computerized Training Lab for implementing Principles of Technology programs.

Periodicals, papers, presentations

"Alliance to Enhance Teaching of Science," *ASCD Update*, Vol. 33 No. 1, January 1991, pp. 4,5.

"Biology and Chemistry—Fun and Interesting with a Learning Styles Emphasis", *CSL news*, Vol. 6, No. 2, January/March, 1992. (Publication of Center for Success in Learning,)

Bonnstetter, R, and J. Pedersen, "S/T/S for Students," *Science Scope*, Vol. 13 No. 4, p. 49. Presents an interesting, effective method for using cooperative controversy to teach science, technology, and societal issues. Written as a conversation between a son and his mother, the article provides good reading for any teacher or parent interested in cooperative learning.

Clapsaddle, Janet, and Joan Thomas, "A Healthy Start for Team Teaching," *Vocational Education Journal*, Vol. 66 No. 6, September 1991, pp. 28-29.

Johnson, R.T., and D. W. Johnson, "Action Research: Cooperative Learning in the Science Classroom," *Science and Children*, Vol. 13 No. 2, pp. 31-32.

"Science for All Americans," American Association for the Advancement of Science (AAAS), Department 2061, P.O. Box 753, Waldorf, MD 20604. A multi-year effort of AAAS to upgrade science education, recently completed its first phase with this publication. Presents an overview of the project's initial work and findings. May be ordered separately or in set.

Sherman, L. W., "A Comparative Study of Cooperative and Competitive Achievement in Secondary Biology Classrooms: The Group Investigation Model Versus an Individually Competitive Goal Structure," *Journal of Research in Science Teaching*, Vol. 26 No. 1, 1989, pp. 55-64.

West, Peter, "Four-Year Science Curriculum Proposed to 'Empower' All High-School Students," *Education Week*, January 29, 1992, p. 4.

Software

Across the Curriculum, 1991-1992 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514. Contains everything students need to learn, practice and use four basic computer skills. Book contains 100 lesson plans with reproducible masters for projects in math, language arts, science, and social studies.

The All About Science Series, Software for Learning, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-264-2926. Ventura educational system with networking version available. Features interactive lessons, vocabulary games, quizzes and on-line glossary. Four titles from which to choose: All about Light and Sound; All About Matter; All About the Solar System; and All About Simple Machines. APL/IBM.

Applied Physics Problem Solving Lab, DEGEM, Technical Lab Systems, P.O. Box 218609, Houston, TX 77218, 1-800-445-1088. An excellent, self-paced program utilizing generators, transformers, and motor controls. Written in a clear and motivational manner, with good illustrations.

CCC Instructional System, Computer Curriculum Corp., Simon & Schuster Education Group, 1701 West Euless Blvd., Suite 139, Euless, TX 76040, 1-800-772-7177. CCC has researched and produced computer-assisted instruction that has proven to get outstanding achievement results. This instruction can be delivered in a system of networked microcomputers or in a SOLO unit. Programs are available in math, reading, and language skills.

ChemAid (Introduction to the Periodic Table), Software for Learning, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-264-2926. Ventura educational system with networking version available. A comprehensive tool for exploring the periodic table. Topics include: atomic number, atomic weight, electron config, specific gravity, uses; and other essentials. APL/MAC.

EduCalc, Grades 7-12, 1991-1992 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514. Introductory spreadsheet tool available for math, science, and social studies. Contains dozens of applications to help students practice spreadsheet skills while exploring and analyzing new information.

Explorations in Science, 1992 Radio Shack Educational Products Guide, Tandy Corporation/Radio Shack, 1600 One Tandy Center, Ft. Worth, TX 76102, 817-390-3091.

General Biology, Software for Learning, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-264-2926. Ventura educational system with networking version available. Highly interactive program emphasizes learning anatomical structures and functions. Five titles from which to choose: VisiFrog; The Earthworm; Protozoa; Senses; The Fetal Pig. APL/IBM/MAC.

Gerrish, Howard H. and William E. Dugger, Jr., Electricity and Electronics, 1992, Goodheart-Wilcox Co., Inc., 123 West Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440, FAX: 708-333-9130. Provides a solid, up-to-date source of information on basic fundamentals of electricity and electronics. Provides "building block" coverage and excellent foundation in principles, circuitry and components. Electricity and Electronics Software is a user-friendly software package that directly correlates to the textbook. Can be used as a supplement for exploratory courses. Software consists of simulations, drill and practice sessions, and a student database to help an instructor track the students. Individual version can be installed on only one hard disk. Site license entitles the user to install the software on up to 10 different computers. Runs on most MS-DOS systems, with or without color capabilities and can be operated from a keyboard. Available in 5.25" 360K and 3.5" 720K formats, 8 disks each. (See above listing under Instructional Materials.)

Interactive NOVA, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. Designed especially for classroom use, Interactive NOVA enables your students to explore and discover science in an exciting new way. Combining the ease of pointing and clicking on a Macintosh computer with quick access to motion video and still photography on a videodisc player, Interactive NOVA allows you and your students to focus on the topics most important to your curriculum. Requires System 6.05 or higher. Grades 5-12.

Marine Life Series, Software for Learning, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-264-2926. Ventura educational system with networking version available. Four titles from which to choose: *Marine Invertebrates*; Life Cycle of a Sea Lamprey; Anatomy of a Shark; Anatomy of a Fish. APL/IBM/MAC.

Multi-Media Audubon's Mammals, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Multimedia version of Audubon's 1840's edition of Quadrupeds of North America in full color with text and CD quality sounds. Mac version requires 2 MB RAM. Color display requires monitor capable of 640x480x256 colors. PC versions requires VGA. MAC and PC.

Multi-Media Birds of America, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Multimedia version of Audubon's 1840 first edition in full color with high quality bird calls. PC Version requires VGA. MAC and PC.

New Grolier Electronic Encyclopedia, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603.The 1991 edition includes all 21 volumes, 33,000 articles and 10 million words of the Academic American Encyclopedia. Includes thousands of color and b/w pictures, maps, and sounds. Requires headphones or speakers connected to CD-ROM for sound. PC version requires VGA for pictures. Optional teacher's guide includes four sections: literature/language arts, history/social studies, science/math, and reference skills. With answer key, tips, and reproducible masters. MAC and PC.

Operation: Frog, Scholastic Inc., P.O. Box 7502, Jefferson City, MO. 65102, 1-800-541-5513. An alternative to— or preparation for—traditional dissection. A lifelike simulation of the dissection of an American bullfrog enables students to participate in every major step of dissection. Students can then reconstruct the frog. The organs must be replaced in the correct and logical order—starting with underlying organs in the dorsal area and proceeding to the ventral layer. The new Mac and MS-DOS versions include new graphics, color, sound, and features like comparative anatomy and on-line reference tool. System Requirements: Apple—64K, Macintoch—1MB, MS-DOS—384K with Color Graphics Card; joystick or mouse optional. Grades 4-10.

pfs: Curriculum Databases, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. These content-based activity packages encourage students to work collaboratively as they examine key topics in science and social studies. Each package contains activities and the complete Scholastic pfs:file/report program. Science program includes Physical Science and Life Science. Available in Apple 5.25. Grades 7-12.

The Plant Doctor, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Database on trees, turf, flowers, shrubs and other plants. From the University of Wisconsin Extension Service publication, The Urban Phytonarian Handbook.

Pollution Patrol, Entrex Software, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-624-2926. Students try to control pollution and identify the sources. They learn the causes and effects of pollution as well as the economic and business/employment costs associated with pollution control. Grades 7-11.

Streib, William J., Digital Circuits (text, study guide/laboratory manual), 1992, Goodheart-Wilcox Co., Inc., 123 West Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440, FAX: 708-333-9130. Introductory text for courses in computer design, circuit theory, troubleshooting and servicing. Very little background in electronics is needed to understand the principles of logic circuit operation. All necessary basic theory is developed in the text. Topics include Boolean algebra, binary numbers, logic gates, buses, memory systems, adders, subtracters, logic element specification sheets, microprocessors, interfaces, and other computer systems and components.

Sullivan, Richard L., Practical Problems in Mathematics for Electronics Technicians, 1991, Delmar Publishers, Two Computer Drive, West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707, FAX: 518-459-3552. Contains practical, "real world" problems which apply to math and electronics with good graphical representations. This book would be a good supplemental tool for an algebra I classroom, even with a reduced amount of advanced math problems.

TLTG Chemistry, TLTG, Texas Association of School Boards, P.O. Box 400, Austin, TX 78767-9820. Program goals to improve students' conceptual understanding of chemical principles, increase student's awareness and appreciation of chemicals and chemical processes, and develop and enhance the critical thinking and mathematical skills necessary for chemical problem solving. A two-semester chemistry curriculum consisting of nine flexible, self-contained modules that integrate print-based materials, computer and interactive viceodisc-based activities, and wet laboratory experiments. TLTG chemistry is a first-year chemistry course that emphasizes quality of understanding rather that quantity of information. The program uses a conceptual, inquiry-based approach. Videodisc-based teacher-led instruction is the courseware components. The video-based content presentations are designed to be used by the teacher as whole class presentation. Computer-based student activities are provided to give small groups of students opportunities to explore chemical principles or to apply what they learned in a whole class presentation or laboratory experiment.

TLTG Math for Science, TLTG, Texas Association of School Boards, P.O. Box 400, Austin, TX 78767-9820. Program Goals: For individual students who are experiencing difficulty in the math-based components of a physical science course. While mathematical principles relevant to physical science concepts are reviewed, it is not the intent of the program to teach math. Instead, the focus is on showing students the relationship between math and science. Each lesson includes several activities. Approximately 10-15 minutes in duration. The program is an excellent bridge for those wishing to integrate the study of the two disciplines. Hardware requirements (minimum): computer, monitor, videodisc player, and input device.

TLTG Physical Science, TLTG, Texas Association of School Boards, P.O. Box 400, Austin, TX 78767-9820. A comprehensive course that increases students' in-depth understanding of physical science, illustrates the relevance of science to daily life, and prepares students for academic and professional advancement in the sciences. The program provides 160 hours of instruction over two semesters. Divided into 15 units, including one introductory unit, seven chemistry units, six physics units, and one unit on energy resources that can be taught at the end of either the chemistry or the physics semester. The target audience is the regular level ninth grade student. The program design is flexible enough to accommodate a wide range of student abilities. In a typical unit, students learn the concepts through several methods—teacher demonstrations, traditional wet laboratory activities, written assignments, small group interaction, and innovative videodisc-based instruction. The courseware is a complete package consisting of electronic instruction and activities, and paper and pencil activities. Hardware requirements (minimum) include computer, monitor, videodisc player and Input device.

Software catalogs

1992 Catalog, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-624-2926. Excellent source of software and CD-Rom/Laserdiscs. Covers all facets of rapidly advancing technology.

BLS Inc., Tutorsystems 1990 Basic Skills Tutorial Software, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252. Adult Education, Grade School, Junior, Senior High. Remedial Skills for All Ages.

Interactive Videodiscs and CD-ROM For Education, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. A large selection of video discs and software for science.

MECC Education catalog 1991-92, 6160 Summit Drive North, Minneapolis, MN 55430-4003, 1-800-685-MECC. Innovative and comprehensive programs in educational technology. Apple II and IBM.

Videos

The Brain, The Annenberg/CPB Project, c/o Intellimation, Attn: Science Dept., P.O. Box 1922, Santa Barbara, CA 93116-1922, 1-800-LEARNER. Examines the basic operating principles of the body's most complex organ, its major structural and functional systems, and the biological foundations of emotion, memory, and unconsciousness. Computer animation, time-lapse microphotography, 3-D modeling, and biological imaging reveal the brain's inner world. *The Brain* series consists of eight one-hour programs on eight video cassettes.

Earth Revealed, Premiered on PP January 1992, The Annenberg/CPB Project, c/o Intellimation, Attn: Science Dept., P.O. Box 1922, Santa Barbara, CA 93116-1922, 1-800-LEARNER. Mountains, rivers and shorelines—seemingly constant features of the landscape—are being worn away and rebuilt by powerful, almost invisible forces. The dynamic interacting systems which drive these forces are explained in *Earth Revealed*. This introduction to geology explores how scientific theories are developed, as well as how our activities today impact Earth's continuing evolution. Consists of 16 half-hour programs on 13 videocassettes. The complete series may be purchased in VHS format. Support materials including a textbook, study guide, and laboratory manual are also available.

IVES Interactive Video Training System, Glencoe, MacMillan/McGraw-Hill, P.O. Box 508, Columbus, Ohio 43216, 1-800-334-7344. Combines power of the computer and impact of motion video and graphics. Training reinforced with hands-on skill modules and lab jobs. Glencoe's *Grob Basic Electronics* will be correlated to the *IVES* interactive video system.

It's a New World, Wisconsin Career Information System, 1078 Educational Sciences Unit I, 1025 West Johnson Street, Madison, WI 53706, 1-800-442-4612. Encourages middle/high school students to consider the importance of mathematics and science in their future. Includes a teacher's guide and suggests ways to utilize other career development and math or science activities. 40 minute VHS.

The Mechanical Universe...and Beyond, The Annenberg/CPB Project, c/o Intellimation, Attn: Science Dept., P.O. Box 1922, Santa Barbara, CA 93116-1922, 1-800-LEARNER. This introduction to physics provides students with interaction of ideas from Aristotle to Einstein. Developed for both the novice and physics student, *The Mechanical Universe* is a flexiable, highly effective teaching tool for physics, engineering, and math curricula. *The Mechanical Universe...and Beyond* consists of two parts, each with 26 half-hour programs on 13 videocassettes. The complete series may be purchased in VHS format. Also available on videodisc which offers an even more flexible resource for lectures. Each of the 26 double-sided, 12" discs includes a visual index. Chapter stops let you identify and find key sequences, such as lab experiments or animations of abstract theories.

Race to Save the Planet, The Annenberg/CPB Project, c/o Intellimation, Attn: Science Dept., P.O. Box 1922, Santa Barbara, CA 93116-1922, 1-800-LEARNER. From Los Angeles to the Amazon, the demands of human populations are changing the face of the planet. Viewers will gain a global perspective on the declining state of the earth with this important new video series on the environmental revolution. Consists of ten one-hour programs on ten videocassettes. Support materials including textbooks and a study guide are also available.

TLTG Physical Science. TLTG Physical Science is a videodisc-based curriculum from the Texas Learning Technology Group that lowers failure rates, improves attendance and changes student and teacher attitudes toward physical science class. 160-hour, two-semester course. Please call 1-800-866-8582 or 1-800-580-TLTG in Texas.

The Video Career Library, Piney Mountain Press, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Contains current labor market information for each job; each tape represents a different occupational "family" from technical to service to professional. Describes job duties, working conditions, wages and salaries, job outlook, and education and training required.

The World of Chemistry, The Annenberg/CPB Project, c/o Intellimation, Attn: Science Dept., P.O. Box 1922, Santa Barbara, CA 93116-1922, 1-800-LEARNER. Provides students with theoretical knowledge of chemistry as well as a diverse sample of chemistry at work, from DNA mapping to the development of cosmetic products. The foundations and behavior of chemical structure are explored in theory and illustrated with computer animation, while demonstrations and on-site footage of working industrial and research laboratories show their practical uses. Consists of 26 half-hour programs on 13 videocassettes. The complete series may be purchased in VHS format. Support materials including a textbook, study guide and lab manual are also available.

Video catalogs

Curriculum-Based Programs 1991-92 Catalog of Audio-Visual Instructional Programs, United Learning, Inc., 6633 W. Howard St., Niles, IL 60648, 1-800-759-0362.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX (903) 886-5744.

MECC Education catalog 1991-92, 6160 Summit Drive North, Minneapolis, MN 55430-4003, 1-800-685-MECC. Innovative and comprehensive programs in educational technology. Apple II and IBM.

Social Studies

Books

Johnson, R. T., D. W. Johnson, and E. J. Holubec, Eds., *Structuring Cooperative Learning: Lesson Plans for Teachers,* Interaction Book Co. Edina, MN, 1987. Features cooperative learning lesson plans by teachers who have used that process in their classrooms; also provides sample lessons for grade levels K-12 and various subject areas, including reading, language arts, mathematics, science, and social studies. Reproducible with some restrictions.

Mothershead, Alice Bonzi, *Dining Customs Around the World,* Garrett Park Press, Garrett Park, MD 20896, 301-946-2553. Customs and taboos associated with being entertained and eating in 50 countries in which Americans frequently find themselves.

Parker, Walter, *Renewing the Social Studies Curriculum,* ASCD Comprehensive Member Book, 1991, Association for Supervision and Curriculum Development, 1250 N. Pitt Street, Alexandria, VA 22314, 703-549-9110 or FAX: 703-549-3891.

Paul, Richard, *Critical Thinking: What Every Person Needs to Survive In A Rapidly Changing World,* Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940.

Instructional materials

Ancient Rome, ECS Learning Systems Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Kit contains tasks in history & politics, daily life, religion, mythology & philosophy, art & literature, and people & places. Grades 5-12.

Applied General Education Through Technology Education, Guide, 1991, Extension Instruction Materials Center, University of Texas at Austin, P.O. Box 7218, Austin, TX 78713-7218, 512-471-7716, 1-800-252-3461. Comprehensive curriculum guide introduces teachers to an interdisciplinary approach for technology, education, language arts, math, science and social studies. Modules contain individualized lesson plans for each discipline with activities designed to provide an applied problem-solving learning experience for all students, centered around a common theme. The disciplinary concepts are tied together by an overlapping timetable to provide easy application and transfer of learning for students and optimum teachability for teachers.

Basic Skills Applications in Career Investigation, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX (903) 886-5744. The equal importance of vocational and academic education is a top priority for public education in the State of Texas. Manual includes over fifty hands-on activities which allow students to apply mathematics, science, communications, social studies and employability skills to over 75 career opportunities.

Consumer Issues, Workbook, 1991, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 512-343-8227 or 1-800-531-5015. Features excellent activities though no table of contents and black and white pictures. However, there are excellent possibilities for integration of economics, math and English with consumer and family economics.

Cornerstones: National Issues Forums, Kendall/Hunt Publishing Company, 2460 Kerper Boulevard, P.O. Box 539, Dubuque, IA 52004-0539, 1-800-258-5622, 1992. Topics include coping with aids: the public response to the epidemic; the drug crisis: public strategies for breaking the habit, and the environment at risk: responding to growing dangers.

Economics and the Free Enterprise System, Media Materials Publishing, Department 920301, 1821 Portal Street, Baltimore, MD 21224, 1-800-638-1010. Students learn about the free market system, money and banking, the Federal Reserve System, types of businesses, and various economic systems in a text that is reinforced with numerous activities. Chapter reviews reinforce the concepts.

GeoSafari, ECS Learning Systems Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Learn basic map skills, identify states and capitals, continents and countries, natural resources, bodies of water, world landmarks, national parks, etc. Requires 4 D-cell batteries or optional AC adaptor. Grades 3-up.

High School Subject Tests, Forms A and B, Comprehensive Assessment Program, Social Studies, American Testronics, 1-800-553-0030.

Integrated Lesson Plans for Trade and Industrial Education, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX (903) 886-5744. Lesson plan modules contain plans in four academic areas: language arts, mathematics, science, and social studies. Each plan references both academic and T&I essential elements. Also included is a matrix which references TAAS objectives.

Office Education Lesson Plan Modules, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX (903) 886-5744. Contain plans in four academic areas: language arts, mathematics, science, and social studies. Each plan references both academic and OE essential elements. Also included is a matrix which references TAAS objectives. Areas developed include: business computer applications; business information processing; microcomputer applications; office administrative systems; and office support systems.

Real Life Activities, workbook, Interest level: 6-12, Adult, Media Materials Publishing, Department 920301, 1821 Portal St., Baltimore, MD 21224, 1-800-638-2758. Students learn to apply a variety of basic knowledge to the world around them. Includes order forms, coupons, and maps and relates to math, social studies, geography, and social sciences.

Trade and Industrial Education Lesson Plan Modules, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX (903) 886-5744. Contain plans in four academic areas: language arts, mathematics, science, and social studies. Lesson plans, in most cases, require the assistance of academic teachers for producing instructional materials for use with the lesson. Each plan references both academic and T&I essential elements. Also included is a matrix which references TAAS objectives. Areas developed include: automotive tech, auto collision repair, building trades, cosmetology, and drafting.

Visions of American History: Struggles for Justice, Volume 1 and 2, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. Series presents high interest mini-documentaries to bring memorable "struggles" in American history to students which will motivate them to want to learn more. At any point in a video presentation, students can interact with the story—express their feelings and opinions, analyze and evaluate different sides of the situation, and draw conclusions. Volume 1 portrays the struggles of Native, Latino, and African Americans. The second volume focuses on women, labor, and immigrants. Components: one Videodisc, ten 3.5" disks, 64-page Teacher Handbook. System Requirements: Amiga with 1 MEG RAM, 20 megabyte hard disk, videodisc player. Grades 6-12.

The Western Tradition, The Annenberg/CPB Collection, P.O. Box 1922, Santa Barbara, CA 93116-1922, 1-800-LEARNER. A two-semester survey course on Western civilization based on the lectures of Eugen Weber, author, historian and professor at the University of California, Los Angeles. His ability to stimulate critical thinking, along with the use of visual materials selected by the Metropolitan Museum of Art, make this course an excellent addition to the history curriculum. Each semester of The Western Tradition course consists of 26 half-hour television programs, a study guide, faculty guide, and a choice of several textbooks. The programs are also available on videocassettes.

Working With Numbers Consumer Math, Workbook, 1991, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 512-343-8227 or 1-800-531-5015. Offers a refresher course in algebra. Has many problems and examples that could be integrated in lab. Contains real life written problems and demonstrates relationship to math.

Instructional materials catalogs

1992 Social Studies Catalog, Grades 6-12, Holt, Rinehart and Winston, 8551 Esters Blvd., Irving, TX 75063, 1-800-225-5425, FAX: 1-800-874-6418.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX (903) 886-5744.

Globe Book Company 1992 Catalog Grades 6-12, Globe Book Company, 4350 Equity Drive, P.O. Box 2649, Columbus, OH 43216, 1-800-848-9500. Classroom curriculum materials in social Studies, Language Arts, Science, and Mathematics.

Steck-Vaughn Company, P. O. Box 26015, Austin, TX 78755, 1-800-531-5015.

Periodicals, papers, and presentations

ASCD Curriculum Update, Association for Supervision and Curriculum Development, January 1991.

"Category M: Assisting Students in Improving Their Basic Skills," Part of the Professional Teacher Education Module Series, Athens, GA: American Association for Vocational Instructional Materials, 1985.

"Civics Programs Available Free," *Texas Lone Star*, Vol. 9, No. 8, October 1991, p. 21.

Harrington, Lois G., "Making Common Cause: Integrating Academic and Vocational Studies," National Association of Secondary School Principals, *Curriculum Report*, Vol. 18, No. 1, September 1988. (ED 298 656.)

Leftwich, Kathy, "Marketing the World," *Vocational Education Journal*, Vol. 66, No. 5, May 1991, pp. 26,27.

"The New Yorker Offers Program for Young Readers," *Texas Lone Star News*, Vol. 3, No. 7, October 1991.

Software

Across the Curriculum, 1991-1992 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514. Contains everything students need to learn, practice and use four basic computer skills. Book contains 100 lesson plans with reproducible masters for projects in math, language arts, science, and social studies.

CCC Instructional System, Computer Curriculum Corp., Simon & Schuster Education Group, 1701 West Euless Blvd., Suite 139, Euless, TX 76040, 1-800-772-7177. The CCC provides you with: measurable achievement gains in math, reading, and language skills.; continuous instruction for elementary through adult students; individualized courses in which levels and emphasis are automatically changed to match student performance; Automatic record-keeping and reports; new math, reading, writing, and science courses that make full use of color graphics and emphasize higher level thinking skills; and many administrative options, including electronic mail and district-wide tracking. The CCC Instructional System delivers this in a complete system of networked microcomputer or in a solo unit.

CIA World Factbook, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. U.S. Government's own world almanac. Profiles of 248 countries, territories and islands. Also includes maps. MAC and PC.

Countries of the World, Grades 4-12, 1991-92 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514. Contains everything students need to learn, practice, and use four basic computer skills. Book contains 100 lesson plans with reproducible masters for projects in math, language arts, science, and social studies.

Crosscountry USA, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. Students are cast as truck drivers in this simulation, and are assigned the task of delivering various goods to destinations throughout the continental United States. They must plan their route as they drive and learn about geography and economics. One or two students may play, or the class can be divided into two teams. Grades 5-12. Apple.

Decisions, Decisions: American History Series, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. Package combines four popular Decisions, Decisions titles, and covers the main units of the American History curriculum. Colonization - Exploring the New World involves students making key decisions about the colonization of space. Urbanization - The Growth of Cities places students in the collective position of mayor and asks them to decide growth vs. status quo. Immigration - Maintaining the Open Door poses the question of accepting refugees. Revolutionary Wars - Choosing Sides teaches students to link past, present, and future. Grades 5-12. Apple and Macintosh.

Desert Storm, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. The War in the Persian Gulf. News stories, photographs, digitized audio reports, original story reports and more. Compiled by TIME Magazine.

EduCalc, Grades 7-12, 1991-92 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514. Introductory spreadsheet tool available for math, science and social studies. Contains dozens of applications to help students practice spreadsheet skills while exploring and analyzing new information.

Hidden Agenda, 1990, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. A simulation that puts the fate of a nation in your students' hands. Students can face the challenge of political office, right in the classroom. A revolution has placed them at the helm of the economically fragile and historically corrupt nation of Chimerica. Their assignment is to lead the nation to political, economic, and social stability. Components: Program disk(s) (not copy-protected), User's Guide, Reference Guide, and Teaching Guide. System requirements: Macintosh—512K, MS-DOS—512K (with CGA). Also runs on Macintosh 512KE. Grades 9-12.

Map Skills, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. Students get trip instructions using maps of five different communities—each with its own scale. They drive on-screen searching for the shortest routes, avoiding busy intersections. Grades 3-12. Apple.

Middle East Diary, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Review of Middle East history, personalities and conflicts. Includes U.S. Department of State background notes, travel advisories, central intelligence data and maps, political leadership and royal families. Hundreds of photographs. MAC and PC.

New Grolier Electronic Encyclopedia, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. The 1991 edition includes all 21 volumes, 33,000 articles and 10 million words of the Academic American Encyclopedia. Includes thousands of color and b/w pictures, maps, and sounds. Requires headphones or speakers connected to CD-ROM for sound. PC version requires VGA for pictures. Optional Teacher's Guide includes four sections: Literature/Language Arts, History/Social Studies, Science/Math and Reference Skills. With answer key, tips and reproducible masters. MAC and PC.

North American Indians, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Database of the history of Native Americans. Includes leadership, tribal heritage, religion, family life, and customs. MAC and PC.

The Oregon Trail, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. An exciting new version of an old favorite challenges students to relive the days of pioneers as they outfit a wagon train. Starting from Independence, Missouri, they head west across nineteenth-century America. If they make the right decisions, they will eventually reach their destination but challenges appear. Grades 5-12. Apple and Macintosh.

pfs: Curriculum Databases, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. These content-based activity packages encourage students to work collaboratively as they examine key topics in science and social studies. Each package contains activities and the complete Scholastic pfs: file/report program. Social studies program includes U. S. History, U.S. Government, World Geography, Cultures, and Economics. Available in Apple 5.25". Grades 7-12.

Place-Name-Index, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Over one million place names collected from the quadrangle maps of the U.S. Geological Survey. Includes names of populated places, schools, lakes, rivers, parks and more. Each record includes name, state, country, FIPS code, elevation, longitude and latitude, and quadrangle map name.

Point of View: The Scholastic History Processor—The Civil War and Reconstruction, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. This new program provides the backbone for a complete unit on the Civil War. Students "see" the war as they read firsthand accounts of battles written by commanding generals. The historical window chronicled by the program ranges from the 1850s and the rumblings of sectional strife through the 1880s. Companion teacher and student handbooks provide a structured format to use the program in the classroom. Full compatibility with any CAV videodisc to incorporate video clips into explorations and presentations. System Requirements: Macintosh—1MB. Requires a hard disk. Videodisc player optional. Grades 5-12.

The Presidents: It All Started With George, Ztek Co. P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Produced by The National Geographic Society and IBM using Linda. Interactive CD-ROM encyclopedia includes 1,000 full-screen color photographs, narrated photo essays, 33 video clips, text and audio of famous speeches, election facts and more. Requires 640K, MCGA or VGA graphics, mouse, speakers or headphones, and optional audio adapter.

Social Studies Adventures, 1992 Radio Shack Educational Products Guide, Tandy Corporation/Radio Shack, 1600 One Tandy Center, Ft. Worth, TX 76102, 817-390-3091. Featuring "Carmen Sandiego" and "Decisions, Decisions: American History Pack."

TIME Magazine Compact Almanac, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Includes full text of TIME Magazine for 1989 along with articles on major news stories from 1923-1989 Full color charts and polls. EGA or VGA.

U.S. Civics, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Designed for persons seeking U.S. citizenship, researching the origins of the United States, and/or teaching American history. Includes Department of Justice, Immigration and Naturalization Service's Federal Citizenship Texts.

U.S. History, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Full text of 107 books on U.S. history including WW II Manhattan Project, Gettysburg, Senate 1789-1989, Watergate, and more. Includes over 1,000 photos, maps and tables. 1991 O.P.A. Best Education Product.

U.S. Presidents, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Biographies and statistics of the Presidents from George Washington to George Bush. Images, first ladies and more.

USA Factbook, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Almanac of the states and territories of the U.S.

USA Wars: Korea, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Pictorial magazine includes biographies, glossaries, UN forces, and campaigns. full length audio of interviews with Korean War veterans.

Where in Europe is Carmen Sandiego?, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. Geography and reference skills are stressed as students explore Europe to find Carmen and her gang. Students may use Rand McNally's Concise Atlas of Europe to decipher clues. Granted "Best Social Studies Program" of 1989. Grades 6-12. Apple and MS-DOS.

Where in the USA Is Carmen Sandiego?, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. Crimebusters become experts in U.S. geography with this exciting game. Grades 6-12. Apple, DOS, Mac.

Where in the World is Carmen Sandiego?, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. A theft has been committed and the thief is dashing from country to country and city to city. Clues left indicate the country, climate, and time zone. To use the clues, students consult The World Almanac and Book of Facts, the 928 page reference guide which is part of the computer. Clues are fed into a computer with a database of possible suspects. Grades 6-12. Apple, MS-DOS, Mac.

Where in Time is Carmen Sandiego?, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. Your inquisitive, students learn to be expert sleuths covering the whole wide world and 1500 years of world history. Grades 6-12. Apple and DOS.

World Atlas Action, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. Contains 18 map games and features 36 individual maps. A unique editing system allows teachers to update and/or customize the games. Students can design their own maps with their own questions and answers. This comprehensive two-disk program offers eight games of Geography Facts. Students may play alone or with a friend, time or untimed. A student records system is included. Grades 2-12. Apple.

Word Works 1, 2, 3, Pesco, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Vocabulary development software with capability of creating 20 different vocabulary worksheets. Career Words series has vocabulary development software for 17 vocational courses.

Ztek CD-ROM Bundle, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Macintosh or IBM/compatible with purchase of CD-ROM drive and includes six discs: Countries of the World, U.S. History, etc.

Ztek CD-ROM Drive Starter Packages, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Pioneer DRM-600 CD-ROM Changer Includes: CD-ROM Drive, Interface Card, Cable, Driver Software, Magazine, Grolier Electronic Encyclopedia. Hitachi CDR-1700S/1750S includes: CD-ROM Drive, Interface Card, Cable, Driver Software, Caddy, Grolier Electronic Encyclopedia.

Software catalogs

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC.

MECC Education catalog 1991-92, 6160 Summit Drive North, Minneapolis, MN 55430-4003, 1-800-685-MECC. Innovative and comprehensive programs in educational technology. Apple II and IBM. Science.

Video Catalogs

BLS Inc., Tutorsystems 1990 Basic Skills Tutorial Software, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252. Adult Education, Grade School, Junior, Senior High, Remedial Skills for All Ages.

Curriculum-Based Programs 1991-92 Catalog of Audio-Visual Instructional Programs, United Learning, Inc., 6633 W. Howard St., Niles, IL 60648, 1-800-759-0362.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX (903) 886-5744.

MECC Education catalog 1991-92, 6160 Summit Drive North, Minneapolis, MN 55430-4003, 1-800-685-MECC. Innovative and comprehensive programs in educational technology. Apple II and IBM.

Interactive Videodiscs and CD-ROM For Education, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. A large selection of video documentaries for social studies class.

Information for all teachers

Books

Ben-Peretz, Miriam, *The Teacher-Curriculum Encounter: Freeing Teachers from the Tyrranny of Texts,* State University of New York Press, Albany, NY, 1990.

Mosston, Muska and Sara Ashworth, *The Spectrum of Teaching Styles*, Longman, Inc., White Plains, NY, 1990. Reviewed by Dolores Varnon, and Virginia Clifton *Educational Leadership*, Vol. 48, No. 8, May 1991, p. 83.

Periodicals, papers, and presentations

American Careers, Career Communications, Inc., 6701 W. 64th Street, Overland Park, KS 66202, 913-362-7788 or New York Office, 226-10 137th Avenue, Laurelton, NY 11413, 718-978-1782, 1991. Published three times a year, Fall, Winter, and Spring.

Beck, Robert H., "Industrial Technology Education," *General Education: Vocational and Academic Collaboration*, February, 1991, National Center for Research in Vocational Education, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455.

Bell, Terrel H., and Donna L. Elmquist, "Technical Interaction in the Classroom," *Vocational Education Journal*, Vol. 67, No. 3, March 1992, pp. 22-24

Biebel, Dan M., "The Natural," *Educational Leadership*, Vol. 49, No. 5, February 1992, pp. 87-88.

Capelli, Stephen L., "Why Must I Take Academic Courses?," *Vocational Education Journal*, Vol. 65, No. 5, September, 1990, p. 42.

DeZonia, Robert H., "Interactive Video: Learning with a Difference," *Vocational Education Journal*, Vol. 65, No. 5, September 1990, pp. 36-37.

Dohner, Ruth E., "Does Voc Ed Work in Middle Schools?", *Vocational Education Journal*, Vol. 67, No. 1, November/December 1990, pp. 26, 27, 77.

Felio, Genelle, "Try This Approach to Teaching Writing," *Vocational Education Journal*, Vol. 67, No. 4, April 1992, p. 62.

Grenn, Tommye Lou, "How I Use Computers in ......A JTPA Medical/Clerical Program, et.al." *Vocational Education Journal*, Vol. 67, No. 3, March 1992, pp. 25-29.

Leftwich, Kathy, "Marketing the World," *Vocational Education Journal*, Vol. 66, No. 5, May 1991, pp. 26, 27.

Mason, Nancy K., "Career Guidance: The Teacher's Role," *Vocational Education Journal*, February 1992, Vol. 67, No. 2, pp. 22-23, 55.

Musko, Kenneth, "Keeping Kids in School," *Vocational Education Journal*, Vol. 67, No. 4, April 1992, pp. 36, 37.

Perry, Nancy J., "The New, Improved Vocational School," *Fortune*, June 19, 1989. Reprinted through the courtesy of the Editors of *Fortune*, The Time Inc., Magazine Company, Time & Life Bldg., Rockefeller Center, New York, NY 10020-1393.

"Plugging Into More Flexible Learning," *Vocational Education Journal*, Vol. 66, No. 5, May 1991, p. 43.

Pritz, Sandra G., "The Role of Vocational Education in the Development of Students' Academic Skills," *Centergram*, Vol. 25, No. 7, July 1990. The paper includes a position statement of the National Association of State Directors of Vocational Education on vocational education's role in the acquisition of basic skills as well as guidelines for implementing the policies and principles of skills integration in vocational education programs. Center on Education and Training for Employment, Columbus, OH.

"Resources: Where to Find Information on Interactive Video," *Vocational Education Journal*, Vol. 65, No. 5, October 1990, p. 38.

Rosenfeld, Neill S., "The Career Connection: These Students Don't Have To Be Reminded Why They're in School," *American Educator*, Vol. 15, No. 3, Fall 1991, pp. 24-29, 42.

Selman, James W., "Why Must I Teach Academic Content?," *Vocational Education Journal*, Vol. 65, No. 5, September 1990, pp. 41-42.

Stone, Teresa M., "Keeping Yourself—and Your Students—Motivated!," *Vocational Education Journal*, Vol. 65, No. 5, September 1990, pp. 22-26.

Sullivan, Richard L., "It's a Hit. (Humor in Teaching)," *Vocational Educational Journal*, Vol. 67, No. 3, March 1992, pp. 36-38.

Vail, Ann, "Tips for Keeping Class Cutters in School," *Vocational Education Journal*, Vol. 67, No. 2, February 1992, pp 13-14.

Weiss, Stefanie, "Innovation: Small Town, Big Changes," *NEA Today*, Vol. 10, No. 3, October 1991, p. 13. Cites the educational innovations taking place at the NEA's smallest lab in Mendon, Michigan.

"What's New: Testing guide," *Vocational Education* Journal, Vol. 66, No. 5, May 1991, p. 51. To support a national movement to replace standardized tests with performance-based assessments, the National Center for Fair & Open Testing has released a 32-page pamphlet "Standardized Tests and Our Children: A Guide to Testing Reform." Contains sections on parents' rights, the history of testing and what test scores mean. Appendices on useful resources and testing terms are included.

Vocational Education Journal, Vol. 67, No. 3, March 1992.

Instructional Materials

Basic Skills Improvement: A Handbook for Reading, Math, Writing, and Oral Communication, 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Designed for use by all educators and planners, whether you're an expert or a novice in the relevant basic skill areas. Provides comprehensive information, ideas and guidance for maximizing opportunities to increase students' basic skills. Mammoth 3-ring notebook holds more than 400 pages of insight, hints, and ideas.

Connections: A Child's Natural Learning Tool, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. Strategies for building an integrated curriculum, including specific activities that the author developed and used in actual classrooms. Written for all levels.

Employability Skills for Cooperative Education Programs, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Contains eight units on job application and interview, safety, employer-employee relations, getting alone with co-workers, salaries: where do they go?, changing jobs and resignations, labor unions, and free enterprise.

Fogarty, Robin, *How to Integrate the Curricula,* ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. A handbook of strategies that bridge ideas for lessons and for learners. Ten models are presented, ranging from the traditional fragmented model to those that connect, sequence, nest, share, web, thread, integrate, network, and immerse in curricular integration. Enables teachers to evaluate their school's current degree of curricular integration.

Instructional Strategies for Using Microcomputers in Vocational Education, 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Learn how you can integrate the microcomputer into your curriculum following the diverse strategies and techniques of the many vocational educators who contributed to this book. Whatever your teaching field, this volume will help you make full and efficient use of the microcomputer in your vocational education program. Includes contact information for each institution used as an example. Nearly 400 pages fit neatly into 3-ring binder.

Glasser, William, M.D., *Control Theory in the Classroom*, 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Author asserts that the problems of discipline, dropouts, and drugs are serious but they are not what is wrong with today's schools. The problem is that capable students make little or no effort to learn. The book demonstrates that learning-teams provide instantly usable ideas which contribute fundamentally to the success of classroom teachers. Because content and the necessary student collaboration skills must be taught, teachers need this book to develop new skills to fully utilize control theory.

Holt, John, *How Children Learn*, 1982, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Mr. Holt shows parents and teachers that learning is as natural as breathing for small children. Children do not need to be made to learn, told what to learn, or shown how. Children have a style of learning that fits their condition. They use this style naturally until we train them out of it. By providing opportunities, children will see clearly what things are truly important to us and to others while making a better path into that world than we could make for them.

Jensen, Eric, *Super-Teaching Book, Vol. I*, 1991-92, Turning Point for Teachers, P.O. Box 2551, Del Mar, CA 92014, 1-800-325-4769 Instructs teacher in building self-confidence, reducing discipline problems, building better relations, boosting student achievement and lowering individual stress level. Contains 199 practical ideas to motivate, open and close classes, use visualization, positive discipline, NLP, music, accelerated learning and new resources. Companion cassette available.

Johnson, Spencer and Constance Johnson, *One Minute* Teacher: How to Teach Others to Teach Themselves, 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Book reflects how teachers, despite many difficulties they face in today's school systems, can make an important contribution to their students' lives and educations. Johnson and Johnson describe how the use of goal setting, praising, and recovery reinforces self-esteem and creates a new kind of learning process that will become lifelong—where every teacher and every student is a winner.

Johnson, Debra Klar, *Last Minute Learning*, product of New Jersey Writing Project in Texas. Excellent structural and confidence-building writing tool. Contact D. Johnson, Taft High School, 11600 FM 471W, San Antonio, TX 78250.

Osborn, Susan, *Free Things for Teachers,* 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Everyone likes to get something for nothing and here's the book to show you how. It's a one-step resource for anyone involved in working with elementary school children. More than 200 items are featured that can be had for the price of a postage stamp or, at most, three dollars. All listings include up-to-the-minute ordering information, descriptions of the materials and lively and helpful hints on how to use each item in the classroom.

Vocational Math Pack, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The back portion is divided into vocational areas and all areas of vocational education are covered. Excellent for integrating. Satisfies requirements of the new Carl D. Perkins Vocational Act. Develops computational and applied math skills and terminology for vocational students in their specific training area and provides practical job-related math problem-solving.

Vocational Writing Skills Pack, Piney Mountain Press. The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. An ideal tool for initiating academic/vocational integration. Enhances communication skills for vocational students in their specific training area and provides practical job-related writing practice.

Winning Time: Your Openings & Closings, Strategies for Teaching & Training, 1991-92, Turning Point for Teachers, P.O. Box 2551, Del Mar, CA 92014, 1-800-325-4769. Set of 3 tapes designed to boost student motivation and interest as well as increase understanding and recall.

"Windows on the Wild," *VICA Professional,* Vol. 26, No. 8, May 1992, p. 3. Windows on the Wild, made possible by a $2.5 million grant from the Eastman Kodak Co., is a five year research project set up to examine the way future generations think about the environment. Windows uses zoos, aquariums and natural history museums as classrooms to teach students how their lives are connected to all other plants and animals. World Wildlife Fund, 1250 24th St. N.W., Washington, DC 20037, 202-293-4800.

Instructional materials catalogs

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 903-886-5744.

Silver Burdett Press 1991-92 Catalog: Books for Preschoolers, Children and Young Adults, Silver Burdett Press, Inc., P.O. Box 1226, Westwood, NJ 07675-1226, 1-800-843-3464. Contains many useful and interesting books that would be excellent for thematic teaching units.

Spring 1992 Publications Catalog, The American Welding Society, Order Department, P.O. Box 351040, Miami, FL 33135, 1-800-334-9353. This publication is free, and lists over 200 publications on welding and related subjects, self-study aids, audio-visual materials, handbooks, computer software and more.

Software

Applied Mathematics Program (AMP), 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Provides the instructor with an effective tool for integrating basic academic skills into the vocational curriculum. Used with both vocational and academic instructors, *AMP* provides the teacher with a means of assessing, instructing, and testing math skills directly applied to specific occupational training programs. Provides a computerized pre-post test that diagnoses the student's math abilities. A prescription is then automatically generated which ties the student's performance to applied math activities in the workbook. After completing assigned activities in the workbook, the computer generates test items which the student may take on the computer or on paper. Finally, the program compares, saves, and prints the student's pre and post test results. Contents: six diskettes, guide, workbook, and site license each.

Computer Learning Foundation Lesson Plans, Scholastic Inc., P.O. Box 7502, Jefferson City, MO. 65102, 1-800-541-5513. These lesson plans are the winning entries in Computer Learning Month Teacher Lesson Plan Contests from the last three years and provide hundreds of ideas on ways to use the computer and technology in your classroom. Grades K-12.

Homework Writer, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. Now there is help for any homework writing assignment. *Homework Writer* guides students through the whole process of their writing assignments. Students brainstorm ideas, find a writing topic, organize their thoughts into an outline, and compose a first draft. They can then use the program's full-featured word processor to type, revise and print their assignments. Components: Program disk (not copy-protected) and User's Guide. System Requirements: Apple—128K, MS-DOS—256K.

Multiple Choices, Software for Learning, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-264-2926. Quickly create puzzles for practice, quizzes for testing, and wordplays for fun. This versatile program enables nine different activities to be generated.

Shop Talk Program, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The Shop Talk program disk will create up to 7 types of vocabulary worksheets in minutes. Words and definitions may be changed, added or new disks may be created entirely with individual's own words and definitions.

Success with Writing, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. Program combines structured writing software and a full-featured word processor with a comprehensive Student Activity book and Teaching Guide—everything needed for a complete writing program! A series of lessons and assignments guide students through the entire writing process for a variety of assignments, including descriptive paragraphs, book reports, persuasive essays, explanatory essays, and stories. Students brainstorm ideas, develop outlines, create drafts, revise, edit, and finally print their compositions. Components: Program disks; Student Activity/Teacher Utility disks; (all disks not copy-protected); a 176 page Student Activity Book, Teaching Guide. System Requirements: Apple—128K, Macintoch—1MB, MS-DOS—256K.

Software catalogs

American Tech 1991 catalog, American Technical Publishers, Inc., 1155 West 175th Street, Homewood, IL 60430, 1-800-323-3471.

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Scholastic Educational Technology Catalog, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513.

Unilab catalog, handled through Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 713-465-9793.

Videos

Effective Study Skills, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Illustrates the importance of developing good study skills in the areas of listening, note-taking, and outlining. One 30-minute videocassette and manual.

Effective Test-Taking, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Video presents techniques for performiong well on tests. One 30-minute videocassette and manual.

Getting Along With Others, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. This humorous and engaging video teaches basic skills on how to get along with others. Six "problem" personality types are identified, along with ways to deal with each of them.

Managing Your Personal Finances, Meridian Education Corporation, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Designed to teach students the basic fundamentals of handling personal finances such as budgeting, checking and savings, applying for and repaying loans and handling consumer credit. VHS or Beta.

The School Survival Video Game, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Using a creative and fun gameboard format, *The School Survival Video Game* helps students survive and succeed in school. Teaches the importance of punctuality, dependability, communicating with teachers, friendship, effective study skills, constructive classroom interaction, relating to authority figures in a positive way, plus more.

The Winning Look, Meridian Education Corporation, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Explains the importances of dressing appropriately in the business world—for job interviewing as well as for continued success on the job. Video explains ways of dressing for different situations and how the first impression you give is an important and lasting one.

Video catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744.

Live Action Videos, 1991 Media Catalog, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Addressing the Needs of Students in At Risk Situations

Books

Feichtner, Sheila H., *"School to Work Transition for At-Risk Youth,"* This transition helps at-risk youth develop the skills and attitudes needed to secure and maintain employment and an adult life-style. (Taken from IN 339, *Centergram*, Center on Education and Training for Employment, Columbus, Ohio, Vol. 25, No. 7, July 1990.)

Periodicals, papers, and presentations

"A Stitch in Time: Helping Young Mothers Complete High School," *Texas Lone Star News*, Vol. 2, No. 4, April 1990. For more information on this comprehensive report, contact the Academy for Educational Development, 202-862-1900.

"At-risk students: Has reform worked?", *Texas Lone Star*, Vol. 9, No. 8, October 1991, pp. 11-13.

"At-Risk Youth: A Course for Better Judgment," *National Corrective Training Institute, Inc.*, 3104 East Camelback Road #274, Phoenix, Arizona 85016-4502, 800-622-1644.

"Free: Special Needs Resources," *Vocational Education Journal*, Vol. 67, No. 1, January 1992, p. 37. Provides information on The Technical Assistance for Special Populations Program (TASPP) of the National Center for Research in Vocational Education and the service it offers to gather information or information for special needs funding-raising efforts, etc.

"Keeping Up: Army Sponsors 'Stay in School' Program," *Vocational Education Journal*, Vol. 66, No 1, January 1991, p. 33.

"Keeping Up: 'At-Risk' Defined," *National Rural Development Institute* (NRDI) study at Western Washington University gives in-depth categorizations and explanations of the overall term. To purchase an $8 copy of the study, including recommendations for policy makers, educators, teachers educators and parents, phone the National Rural Development Institute at 206-676-3576.

Musko, Kenneth, "Keeping Kids in School," *Vocational Education Journal*, Vol. 67, No. 4, April 1992, pp. 36,37.

Ryan, Michael, "They Don't Skip School Anymore," *Parade Magazine*, September 8, 1991, p. 8.

"Update: Middle grades key to dropout intervention," *School and College*, December 1988, p. 12.

Vail, Ann, "Tips for Keeping Class Cutters in School," *Vocational Education Journal,* Vol. 67, No. 2, p. 13.

Instructional Materials

Auto Service - Special Needs Curriculum, IML, 1981. Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers basic auto service techniques such as safety, changing oil, lubrication, and changing and rotating tires. Designed to supplement skills of special needs students.

Basic English Guide. Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Materials were developed using a step-by-step process which takes the student from identifying parts of speech to writing paragraphs.

Basic Skills for Cooperative Education Programs, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Ten units covering survival skills; work forms; you and the law; communications; banking, consumerism; credit, budgeting; insurance; and the metric system.

Clerical Skills for Special Needs Students, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Contains units on basic keyboarding, basic letter writing, proofreading, using resources and references, language usage, communication, telephone usage, filing, and organizing work. Teacher's Guide, Student Manual.

Deaf Interpreter Training, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Material identifies skills, tasks, and knowledge to be taught and furnishes a training program for those who provide professional interpretation for the deal. Books I and II, as well as video tapes for Deaf Interpreter Training.

English at Work, New Reader's Press, presents communication and problem solving skills in this multimedia resource for active learning. Teacher's guide, photocopy masters, audiotape, cartoon cards, posters, and photos included. Marketplace Products, *Vocational Education Journal,* Vol. 66, No. 5, May 1991, p. 52, 1-800-826-9972.

Operation Leather, Tandy Leather Company, P. O. Box 2934, Ft. Worth, TX 76113, 800-433-5546. Keep your students interested and motivated. Tandy Leather's exclusive Operation Leather program satisfies all the requirements of The Perkins Act. It fully integrates the computer with all phases of starting and operating a real manufacturing business. Takes the students through every phase of creating a business, manufacturing products and then selling them.

Proff-Witt, Judy, *Take Time*, Pro-Ed 1991, 8700 Shoal Creek Boulevard, Austin, TX 78758-6897, 512-451-3246. A structured, easy-to-administer program to teach time telling using a conventional clock face which is broken down into three level: time telling to the hour; time telling to the 5 minutes, and time telling to the minute. Four major skills are taught: counting numbers around the clock, pairing the short/long hand with the house/minute, telling time reading only one hand (long/short), and telling time reading both hands. Students of any age who have not mastered the skill of telling time would benefit from this program.

Vocational Assessment of Students with Special Needs, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Included in the book are implementation guidelines, checklists, and forms. Arranged in eight chapters, the information includes an introduction to vocational assessment; how to plan and develop a program of vocational assessment; the actual process of vocational assessment--to include a basic vocational assessment (Levels I and II), and a comprehensive vocational assessment (Level III); how to use vocational assessment in individualizing educational planning; and, a review of existing vocational assessment and evaluation programs.

Vocational Math Supplemental Units, IML, 1990, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers fractions, decimals, percents, measurement, money, division, formulas, reasoning and problem-solving. Material is designed for the special needs student.

Vocational Readiness Curriculum, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Three different modules deal with Neuromuscular Development, Spatial Relations, and Fundamentals of Mathematics. This curriculum was developed by Dr. Lawrence T. McCarron, an authority in the field of training special needs students for successful employment. Originally developed for the Texas Education Agency to assist local education agencies in preparing special needs students for the world of work, the VCR modules are also effective for use in a variety of additional instructional settings and with a diverse student population.

Videos

It's Your Life . . . Take Charge, Meridian Education Corporation, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Designed to heighten student's awareness of factors leading to dropping out and to help students consider their choices. The materials include a consumable student workbook (available in English and Spanish) for individual or group use and a videocassette (25 minutes, VHS) that depicts five different students, the choices they made about school, and the impact of those choices. A User's Guide accompanies the videocassette.

Nobody Listens! Meridian Education Corporation, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. A true, shocking portrayal of one teen's struggle with life after dropping out of high school. Run time 48 minutes.

Video Catalogs

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC.

United Learning Curriculum-Based Programs 1991-92 Catalog of Audio-Visual Instructional Programs, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Software

HOTS (Higher Order Thinking Skills): Using Computers to Develop Thinking Skills in Students at Risk, Dr. Stanley Pogrow, University of Arizona, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. General thinking skills curriculum that teaches students how to learn information and concepts the first time they are taught. Techniques rely heavily on the power of computers to motivate student interest and on the ability of talented teachers to stimulate critical thinking in problem-solving environments.

Math on the Job--English on the Job, Careers, Inc., 1211 10th St. S.W., P.O. Box 135, Largo, FL 34649-0135, 1-800-726-0441. Allows special needs and at-risk students an opportunity to explore careers and practice basic skills related to their exploration experiences, and provide diagnostic and remedial occupationally related skills information. Students discover how various math and English concepts and skills are used in occupations, apply these skills in the performance of selected tasks, and consider the education and training requirements for selected occupations. Thirty career areas available. Print or computer versions.

Math On the Job

Basic competencies required on the job include the ability to:

Read, write, count, add, subtract, divide, round off, and solve work problems with whole numbers.

Read, write, add, subtract, and solve word problems with dollars and cents.

Read graduated scales.

Estimate and measure in standard units, including time, weight, and distance.

Read, write, and perform some operations with fractions.
Calculate percentages.

English on the Job

Basic competencies required on the job include the ability to:
Vocabulary - Spell words, find correct definitions, know word meanings.
Listening - Identify facts, directions, and meaning of words, make judgments.
Speaking - Use correct pronunciation, give information or directions, obtain facts.
Reading - Identify written facts, explain meaning of written materials.
Writing - Capitalization, punctuation, and grammar, write short notes conveying information; fill out forms.

Education for Employment, The Conover Company, Ltd. 1991 Catalog, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The Conover Company, Ltd. is dedicated to providing quality, multimedia employability skills and workplace literacy programs for special needs, at-risk and disadvantaged youth and adults. These programs will help provide a flexible workforce able to meet tomorrow's labor needs with minimal retraining. They are narrowing the gap between education and the needs of the workplace.

Agriculture

Books

Marion, Nino. *Math for Welders,* Goodheart-Willcox Company, Inc. 123 W. Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440. A combination textbook and workbook which teaches basic mathematics skills and provides practical exercises useful in the welding field. Covers six areas of instruction including whole numbers, common fractions, decimal fractions, measurement, percentages and metric system.

Instructional materials

Agricultural Business Sales and Marketing, Instructor Book, Handouts, Competency Profile. Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. A 2-semester course covering human relations, communications, selling, advertising procedures, record keeping, and personnel management and microcomputers.

Agriculture Construction, Volumes I and II, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Contains competency based instruction covering arc welding and project construction; Volume II contains oxy-gas and other cutting/welding processes, woodworking, metals, and finishing.

Agricultural Education Competency Profiles, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992.

Agricultural Management and Economics, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Presents economic principles and management practices that apply to agribusiness and the farm business. Covers economic principles in agriculture, business management, planning the farm business, and operating the agricultural business.

Agricultural Marketing, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Revised edition covers marketing of crop and livestock production. It can be used in agricultural management and economics, livestock production, crop production, and adult classes.

Agricultural Mechanics II, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers power tools, arc welding, cold metal skills, spray painting, tool sharpening, oxyacetylene welding, and materials selection/plan reading and interpretation.

Agricultural Science I Core Curriculum, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992.

Agricultural Structures, Volumes I and II, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Volume I covers constructing farm building, planning farm water systems, livestock waste management, and building fences; whereas Volume II covers working with concrete, drawing and plan reading, electrical work on the farm, planning grain-feed handling, plumbing on the farm, and alternate energy systems.

Applied Biology/Chemistry course, 1991, Center for Occupational Research and Development (CORD), 601C Lake Air Drive, Waco, TX 76710, 1-800-848-4815. High school course that uses an applications-oriented, hands-on approach to teach biology and chemistry. ABC employs student activities that relate to work and other common experiences, and uses video as an effective motivational and information medium. Targets mid 50% of vocational students and science-certified teachers if taught for science credit; home economics, agriculture, health, and technology teachers if infused or taught for vocational credit.

Aquaculture, MAVCC, Educational Development and Training Center, East Texas State University, Commerce, TX 75429, 1-800-886-EDTC, FAX: 903-886-5744. Discusses fish farming from a practical perspective for trout, crayfish, bait fish and more. Covers site planning, water quality management, marketing, record keeping, and financial planning.

Basic Surveying Techniques, MAVCC, 1987, Educational Development and Training Center, East Texas State University, Commerce, TX 75429, 1-800-886-EDTC, FAX: 903-886-5744. Provides surveying students with information and hands-on application for taking horizontal, vertical, and angular measurements for various types of surveying.

Biotechnology in Agriculture, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992.

Brown, Walter C., *Blueprint Reading for Industry*, Goodheart-Willcox Company, Inc. 123 W. Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440. A training course that provides instructions in basic blueprint reading for the metalworking and plastics industries. Can be used by both expert and novice readers. Beginning with the basics (reading a steel rule, understanding orthographic projection), the text progresses logically to advanced skills, such as reading welding blueprints and numerical control documents.

Building Fences, AAVIM, 1974, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Includes procedures for building barbed wire, woven wire, electric cable, welded panel, board, wood rail, and chain link fences.

Bulletin, *Student Voice: Motivating Students Through Empowerment,* explains how to give students a voice in the educational process and encourage them to take a more active role in their learning. The bulletin is $6 plus $2.50 postage. OSSCC, University of Oregon, 1787 Agate St., Eugene, OR 97403. As cited in *Region 10 Center Signal,* February 1992, Vol. XIII, No. I, 400 East Spring Valley Road, Richardson, TX 75083-1300, 214-231-6301.

Career Opportunities in Agribusiness and Natural Resources, Cluster, 1991, Educational Development and Training Center, East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Contains an information sheet which provides pertinent information related to agriculture careers and activities that assist students in gaining a realistic perception of the nature of work associated with the cluster. Unit test is included to determine students' mastery of the information. Each cluster packet also contains a unit of instruction which describes educational/career resources that can provide additional information concerning careers of interest.

Careers in Agribusiness and Natural Resources, 1991, 35mm full-color slides, casette tape (narrated in both English and Spanish), Educational Development and Training Center, East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Presentation consists of slides of workers performing actual work tasks of careers depicted. Includes information concerning duties, educational/training requirements, personal qualifications, salary ranges, and employment outlooks of the careers discussed.

Concrete and Concrete Masonry, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers properties of concrete, Portland cement, selection of materials, designing the mix, yields and mix corrections, tool equipment, mixing concrete, site preparation and forming, placing and reinforcing concrete, finishing and curing, lasting quality concrete, admixtures and masonry construction.

Concrete Materials Proportioning, IML. 1977, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers history and uses of concrete and cement, how to select good materials, proper proportioning methods, and how to do a classroom demonstration mix.

Developing Programs of Supervised Agricultural Experience, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Units for agricultural science I, agricultural science II and advanced courses. Covers placement, ownership and director laboratory SAEs, instructions for the secondary record book and an introduction to the farm business record book.

Farm Business Management Contest Review Questions, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. 32 pages of review questions for all areas of farm business management contest. Accompanying instructor's key shows correct answers and how the problems are worked.

Farm Planning Handbook (Manual 75 Revised), Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. UMC-Extension, Revised 1990. Contains six parts: introduction to farm planning, planning cropping systems, planning livestock systems, long-range farm planning, annual plans and partial budgets, and miscellaneous information.

Fish and Wildlife Management, MDC, 1989, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers ecological principles, habitat management (forest, cropland, grassland, wetland, pond and stream management, animal life, histories, fish and wildlife values, outdoor ethics, conservation careers, agency assistance, fish and wildlife protection and a history of the Missouri Conservation Commission. Instructor Packet, Student Reference, and Competency Profile are available.

Fractions, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Applied practice of mathematical skills in vocational settings. Covers understanding fractions; proper, improper, mixed and equivalent fractions; converting and reducing fractions; addition; subtraction; multiplication and division.

Handbook for Advisory Council Members and *Handbook for Instructors Involving Vocational Advisory Groups in Program Improvement,* University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992.

Instructional Strategies for Using Microcomputers in Vocational Education, 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Learn how you can integrate the microcomputer into your curriculum following the diverse strategies and techniques of the many vocational educators who contributed to this book. Whatever your teaching field, this volume will help you make full and efficient use of the microcomputer in your vocational education program. Includes contact information for each institution used as an example. Nearly 400 pages fit neatly into 3-ring binder. Prod. #AHE15HI.

Introduction to Agricultural Business, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia. MO 65202, 1-800-669-2465, FAX: 314-882-1992. Instructor Packet, Handouts, and Competency Profile are available.

Introduction to Microcomputer Applications in Agriculture, Educational Development and Training Center, East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Computer-aided instructional package covering farm business management, animal science, crop science, horticulture, Ag. mechanics and agribusiness. Instructor's guide includes binder and 5.25" disc.

Mathematics for Horticulture, Ohio, 1982, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Presents basic math skills in the context of horticulture. Covers math for garden center sales, landscape construction, greenhouses and surrounding areas, nursery, arboriculture, and landscape design. Provides numerous exercises and problems.

Measurement, Instructor and Key. Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Applied practice of mathematical skills in vocational settings. Covers linear measurement, units of measurement, and figuring board feet.

Micrometers, Calipers, and Gages, Hobar, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. How to use measuring tools such as micrometers, vernier calipers, thickness gages, and wire gages.

Planning Facilities for Vocational Agriculture Departments, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992.

Planning Fences, AAVIM, 1980, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers location and layout, quality of materials, anchor-post assemblies, type, size and number of line posts, electric fence controllers and cost of passageways and materials.

Plant Genetics and Crop Breeding, IL, 1990, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Series of three booklets on plant genetics: includes "Plant Reproduction and Heredity," "Plant Life Cycles and Breeding" and "Crop Breeding: Tomato."

Plant Growth and Development, Ohio, 1989, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Revised manual presents plant growth and development in field crop production. Emphasizes major agronomic crops: corn, soybeans, and small grains. Describes plant growth processes such as germination, seedling growth, absorption, photosynthesis, respiration, transpiration, and reproduction.

Plant Science Unit, IML, 1991, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Revised unit covers the importance of plants, classification of plants, plant growth factors, weeds, diseases, insects, germination, photosynthesis, respiration, sexual and asexual reproduction, and plant genetics.

Torque and Torque Wrenches, Hobar, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Defines torque and explains units of torque and torque wrenches.

Using Microcomputers in Teaching Vocational Agriculture, 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. A practical and readable guide for the vocational agriculture instructor. Explains everything you need to know to realize the full potential of this amazing teaching tool, from selecting hardware and software to teaching your students how to use microcomputers. Covers different types of software packages and gives specifics on using them in various agricultural programs. An indispensable reference for every agricultural educator.

Vocational Math Pack, Bank, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252. The back portion is divided into vocational areas and all areas of vocational education are covered. Excellent for integrating. Satisfies requirements of the new Carl D. Perkins Vocational Act. Develops computational and applied math skills and terminology for vocational students in their specific training area and provides practical job-related math problem-solving.

Vocational Math Supplemental Units, Student volume and Key. Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers fractions, decimals, percents, measurement, money, division, formulas, reasoning, and problem-solving. Material is designed for the special needs student.

Vocational Writing Skills Pack, Piney Mountain Press. The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. An ideal tool for initiating academic/vocational integration. Enhances communication skills for vocational students in their specific training area and provides practical job-related writing practice.

Work Attitudes and Human Relations in Business, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Provides activities that encourage and reinforce personal skills development. Covers attitudes, ethics, safety, self-management skills, and efficiency for greater productivity.

Instructional materials catalogs

1992 Cambridge University Press Complete Catalog and Index, 40 West 20th Street, New York, NY 10011-4211, Rep.: Michael White, Fort Worth, TX, 817-232-8827, FAX: 817-232-8827.

Delmar Publishers Inc. 1992 Catalog, Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Spring 1992 Publications Catalog, The American Welding Society, Order Department, P.O. Box 351040, Miami, FL, 33135, 1-800-334-9353. This publication is free, and lists over 200 publications on welding and related subjects, self-study aids, audio-visual materials, handbooks, computer software, and more.

Periodicals, papers, and presentations

Beck, Robert H., "Agricultural Education," *General Education: Vocational and Academic Collaboration*, February 1991, National Center for Research in Vocational Education, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652.

Cory, Thomas P., "Gatekeepers of the Future," *Vocational Education Journal*, Vol. 65, No. 5, September 1990, pp. 26, 27, 50.

Staller, Bernie L., "Insider: FFA Center Restructures to Meet Customer Needs," *Vocational Education Journal*, Vol. 67, No. 3, March 1992, p. 45.

Waidelich, Will, "Middle Schoolers Dig Into Voc Ed...: Agricultural Education" *Vocational Education Journal*, Vol. 67, No. 1, November/December 1990, p. 40.

"Windows on the Wild," *VICA Professional*, Vol. 26, No. 8, May 1992, p. 3. (Windows on the Wild, made possible by a $2.5 million grant from the Eastman Kodak Co., is a five year research program set up to examine the way future generations think about the environment. Windows uses zoos, aquariums, and natural history museums as classrooms to teach students how their lives are connected to all other plants and animals. World Wildlife Fund, 1250 24th St. N.W., Washington, DC 20037, 202-293-4800.)

Software

Agricultural Math Tutor Series, AAVIM Vocational Resources Catalog 1992, American Association for Vocational Instructional Materials, 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. A series of programs that help instruct in the solutions of practical farm management problems. A description of appropriate ways to use each math skill is offered and then students are taken through the steps of finding the solutions. Titles: General Agriculture, Beef Production, Crop Production, Agricultural Mechanics.

Agri/Stats I, Z-tek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. U.S. agricultural statistics: crop estimates, grain stock, county estimates-crops and livestock, hog and pig estimates, cattle inventory and cattle on feed. Back to 1939. Annual update.

Applied Mathematics Program (AMP), 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Provides the instructor with an effective tool for integrating basic academic skills into the vocational curriculum. Used with both vocational and academic instructors, *AMP* provides the teacher with a means of assessing, instructing, and testing math skills directly applied to specific occupational training programs. Provides a computerized pre-post test that diagnoses the student's math abilities. A prescription is then automatically generated which ties the student's performance to applied math activities in the workbook. After completing assigned activities in the workbook, the computer generates test items which the student may take on the computer or on paper. Finally, the program compares, saves, and prints the student's pre and post test results. Contents: six diskettes, guide, workbook, and site license each.

Math on the Job—English on the Job, Careers, Inc., 1211 10th St. S.W., P.O. Box 135, Largo, FL 34649-0135, 1-800-726-0441. Allows special needs and at-risk students an opportunity to explore careers and practice basic skills related to their exploration experiences, and provide diagnostic and remedial occupationally related skills information. Students discover how various math and English concepts and skills are used in occupations, apply these skills in the performance of selected tasks, and consider the education and training requirements for selected occupations. Thirty occupation titles. Print and computer versions available.

Math On the Job

Basic competencies required on the job include the ability to:

Read, write, count, add, subtract, divide, round off, and solve work problems with whole numbers.

Read, write, add, subtract, and solve word problems with dollars and cents.

Read graduated scales.

Estimate and measure in standard units, including time, weight, and distance.

Read, write, and perform some operations with fractions.

Calculate percentages.

English on the Job

Basic competencies required on the job include the ability to:

Vocabulary—Spell words, find correct definitions, know word meanings.

Listening—Identify facts, directions, meaning of words, and make judgments.

Speaking—Use correct pronunciation, give information or directions, obtain facts.

Reading—Identify written facts, explain meaning of written materials.

Writing—Capitalization, punctuation, and grammar, write short notes conveying information; fill out forms.

Shop Talk Program, Piney Mountain Press, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The Shop Talk program disk will create up to 7 types of vocabulary worksheets in minutes. Words and definitions may be changed, added or new disks may be created entirely with individual's own words and definitions.

Testmaster II and Textmaster II, Lovesoft Educational Software, Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 713-465-9793. Two complete, user-friendly, menu-driven, testing/grade management systems for the Apple II. Each Data Package contains a varying number of modules. Each module includes three copyable, modifiable, and bootable student disks: Test; Text; and Review. A hardcopy of the Test, Answer Key, and Text disk is provided along with any required worksheets.(Horticulture)

Word Works 1,2,3, Pesco, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Vocabulary development software that creates 20 different vocabulary worksheets. Career Words series has vocabulary development software for 17 vocational courses.

Software catalogs

1992 AAVIM Vocational Resources Catalog, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Excellent source of software programs in many fields of agriculture.

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software

Videos

Aquaculture: Farming the Waters, Videotape, AAVIM, 1989, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. An up-to-date video on the latest techniques and the importance of fish farming as an alternative enterprise.

The Car That's Right for You, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Live action video to help the viewer learn the important steps in buying a car, the techniques of negotiating, and the responsibilities involved.

It's Not Your Father's Vo-Tech, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. A promotional video designed to acquaint students with the career opportunities available to them by pursuing vocational training. One 15-minute videocassette.

Video catalogs

1992 AAVIM Vocational Resources Catalog, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Excellent source of video cassettes in many fields of agriculture.

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Auto Mechanics

Books

Stockel, Martin W. and Martin T., *Auto Mechanics Fundamentals*, The Goodheart-Willcox Company, Inc., 1990.

Instructional Materials

Auto Service - Special Needs Curriculum, IML, 1981, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers basic auto service techniques such as safety, changing oil, lubrication, and changing and rotating tires. Designed to supplement skills of special needs students.

Auto Service and Minor Repair, Instructional Materials Catalog, Trade and Industrial Education, 202-B Skyland Blvd., Tuscaloosa, AL 35405, 205-759-5448. Modules include: Engines; Front End and Tires; Cooling System; Electrical System; Transmission; Air Conditioning; Brakes; Lubrication; Fuel and Ignition; Accessories; and Crankcase, Exhaust, Emission Control.

Automotive Technology, Instructional Materials Catalog, Trade and Industrial Education, 202-B Skyland Blvd., Tuscaloosa, AL 35405, 205-759-5448. Revised modules include: General Engine Repair; Engine Performance; Automotive Drivetrain; Brakes; Steering and Suspension; Electronic Systems; Electrical Systems; Heating and Ventilation; and Air Conditioning (Manual & Automatic).

Brown, Walter C., Blueprint Reading for Industry, Goodheart-Willcox Company, Inc., 123 W. Taft Drive, South Holland, IL 60473-2089. 1-1-800-323-0440. A training course that provides instructions in basic blueprint reading for the metalworking and plastics industries and can be used by both expert and novice readers. Beginning with the basics (reading a steel rule, understanding orthographic projection), the text progresses logically to advanced skills, such as reading welding blueprints and numerical control documents.

Career Opportunities Information Series, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. These cluster units contain an information sheet which provides pertinent job-related information covering the careers classified. Activities assist students in gaining a realistic perception of the nature of work. In addition, a unit test helps determine students' mastery of the information.

Career Opportunities Information
Communications & Media
Construction
Manufacturing

Public Services
Transportation

Career Opportunities Audiovisuals, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Slide/tape presentations containing full-color slides, cassette tape (English and Spanish) and an instructor's guide. Slides present workers performing actual tasks of the careers depicted, and the narrative includes information on the duties, educational/training requirements, personal qualifications, salary ranges, and employment outlooks of the careers.

Construction
Communications and Media
Manufacturing
Public Services
Transportation

Instructional Strategies for Using Microcomputers in Vocational Education, 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Learn how you can integrate the microcomputer into your curriculum following the diverse strategies and techniques of the many vocational educators who contributed to this book. Whatever your teaching field, this volume will help you make full and efficient use of the microcomputer in your vocational education program. Includes contact information for each institution used as an example. Nearly 400 pages fit neatly into 3-ring binder.

Marion, Nino. *Math for Welders*, Goodheart-Willcox Company, Inc., 123 W. Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440. A combination textbook and workbook which teaches basic mathematics skills and provides practical exercises useful in the welding field. Covers six areas of instruction including whole numbers, common fractions, decimal fractions, measurement, percentages, and metric system.

Owning a Car, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Outlines the terms for purchasing a car and the responsibilities involved in owning a car. Contains 48 slides, 9 minute tape.

Trade and Industrial Education Lesson Plan Modules, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Contain plans in four academic areas: language arts, mathematics, science, and social studies. Lesson plans, in most cases, require the assistance of academic teachers for producing instructional materials for use with the lesson. Each plan references both academic and T&I essential elements. Also included is a matrix which references TAAS objectives. Areas developed include: automotive tech, auto collision repair, building trades, cosmetology, and drafting.

Vocational Math Pack. Piney Mountain Press, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The back portion is divided into vocational areas and all areas of vocational education are covered. Excellent for integrating. Satisfies requirements of the new Carl D. Perkins Vocational Act. Develops computational and applied math skills and terminology for vocational students in their specific training area and provides practical job-related math problem-solving.

Vocational Writing Skills Pack, Piney Mountain Press. The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. An ideal tool for initiating academic/vocational integration. Enhances communication skills for vocational students in their specific training area and provides practical job-related writing practice.

VOCT Slide Tape Presentation, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. A narrative slide/tape presentation that introduces the Vocational Opportunities Clubs of Texas. It includes information on the history and purpose of VOCT, projects and contests for VOCT members, and the election of local and area officers. Contains 75 slides, 15-minute tape, and a narrative.

Instructional materials catalogs

1991-92 Service Training Materials Catalog, Ford Service Publications, P.O. Box 07150, Detroit, MI 48207, 1-800-782-4356. Multicolor transparencies for use with overhead projectors. An ideal training medium for large or small groups.

1992 Catalog, Delmar Publishers Inc., Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Instructional Materials Service, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601. Full array of instructional materials from competency profile to advanced curriculum guide.

Trade and Industrial Instructional Materials, Instructional Materials Service, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601. Major system color transparencies available.

Periodicals, papers, and presentations

Cosby, Richard. "Insider: Developing T&I Leaders," *Vocational Education Journal*, Vol. 67, No. 1, January 1992, p. 41.

Hudson, Jesse. "Insider: The T&I Division," *Vocational Education Journal*, Vol. 67, No. 1, January 1992, p. 41.

Smith, Ethel. "Insider: *NATIE's* Many Benefits," *Vocational Education Journal*, Vol. 7, No. 1, January 1992, p. 41.

Software

Applied Mathematics Program (AMP), 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Provides the instructor with an effective tool for integrating basic academic skills into the vocational curriculum. Used with both vocational and academic instructors, *AMP* provides the teacher with a means of assessing, instructing, and testing math skills directly applied to specific occupational training programs. Provides a computerized pre-post test that diagnoses the student's math abilities. A prescription is then automatically generated which ties the student's performance to applied math activities in the workbook. After completing assigned activities in the workbook, the computer generates test items which the student may take on the computer or on paper. Finally, the program compares, saves, and prints the student's pre and post test results. Contents: six diskettes, guide, workbook, and site license each.

Automotive technician software, Trade and Industrial Instructional Materials, Instructional Materials Service, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601. Includes Basic Automotive ; Engines; Electrical Systems; Final Drives and Transmissions; and Automotive Technology Game.

Intelligent Video Learning System (IVLS), Ford Motor Company, 3000 Schaefer Road, P.O. Box 1901, Dearborn, MI 48121, 1-800-933-IVLS, an interactive videodisc system developed with Sony, Inc. Provides a training delivery system that combines the visual impact of video presentation with management capabilities of a computer. Provides training on electrical systems; engine performance, engine repair, manual transmission and drive train, automatic transmission and drive train, suspension and steering, brakes, climate control. Further programs developed in 1991.

Math on the Job—English on the Job, Careers, Inc., 1211 10th St. S.W., P.O. Box 135, Largo, FL 34649-0135, 1-800-726-0441. Allows special needs and at risk students an opportunity to explore careers and practice basic skills related to their exploration experiences, and provide diagnostic and remedial occupationally related skills information. Students discover how various math and English concepts and skills are used in occupations, apply these skills in the performance of selected tasks, and consider the education and training requirements for selected occupations. Thirty occupation titles. Print and computer versions available.

Math On the Job

Basic competencies required on the job include the ability to:

Read, write, count, add, subtract, divide, round off, and solve work problems with whole numbers.

Read, write, add, subtract, and solve word problems with dollars and cents.

Read graduated scales.

Estimate and measure in standard units, including time, weight, and distance.

Read, write, and perform some operations with fractions.

Calculate percentages.

English on the Job

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Vocabulary—Spell words, find correct definitions, know word meanings.

Listening—Identify facts, directions, and meaning of words, make judgments.

Speaking—Use correct pronunciation, give information or directions, obtain facts.

Reading—Identify written facts, explain meaning of written materials.

Writing—Capitalization, punctuation, and grammar, write short notes conveying information; fill out forms.

Mechanics, Vocational Reading Skills, Aquarius, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-969-2411. User-friendly programs with no need for teacher involvement in computer instruction. Program includes general operating principles; lubrication; cooling syustems; ignition systems; and air conditioning. Materials are suitable for use with mainstreamed students and students with impairments and disabilities.

Shop Talk Program, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The Shop Talk program disk will create up to 7 types of vocabulary worksheets in minutes. Words and definitions may be changed, added or new disks may be created entirely with individual's own words and definitions.

Testmaster II and Textmaster II, Lovesoft Educational Software, Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 713-465-9793. Two complete, user-friendly, menu-driven, testing/grade management systems for the Apple II. Each Data Package contains a varying number of modules. Each module includes three copyable, modifiable, and bootable student disks: Test; Text; and Review. A hardcopy of the Test, Answer Key, and Text disk is provided along with any required worksheets.

Vocational Math for Automotive Technicians, AAVIM Vocational Resources Catalog 1992, American Association for Vocational Instructional Materials, 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Diagnostic and teaching program of math used by automotive technicians including 80 practical multiple choice problems in set of 20.

Word Works 1,2,3, Pesco, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Vocabulary development software that creates 20 different vocabulary worksheets. Career Words series has vocabulary development software for 17 vocational courses.

Software catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Vocational Education Software & Videos Catalog, Piney Mountain Press, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Automotive technology videos featuring *Shopware Educational Systems* and *DRW*. Graphics included.

Videos

Auto Service Vocabulary Module—Special Needs, IML, 1981, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers terminology for tool identification and under-hood inspection. Packet includes approximately 100 terms explained in a four-step sequence, instructor guide, and one student work manual.

Automotive Measurement, Trade and Industrial Instructional Materials, Instructional Materials Service, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601.

Caring for Your Car: Automotive Basics, Meridian Education Corporation, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Demonstrates do-it-yourself service operations such as changing spark plugs, oil filters, a flat tire, etc. Shows easy methods to diagnose engine no-start problems, use of jumper cables, and exterior maintenance tasks.

Cylinder Head Service, Trade and Industrial Instructional Materials, Instructional Materials Service, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601.

Engine Disassembly, Trade and Industrial Instructional Materials, Instructional Materials Service, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601.

How to Buy A Used Car, Meridian Education Corporation, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.Helps teenagers avoid costly mistakes when buying a used car. It presents useful suggestions on what to look for prior to purchase. VHS or Beta Video.

The Video Career Library, Piney Mountain Press, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Contains current labor market information for each job; each tape represents a different occupational "family" from technical to service to professional. Describes job duties, working conditions, wages and salaries, job outlook, and education and atraining required.

Video catalogs

1991-92 Service Training Materials Catalog, Ford Service Publications, P.O. Box 07150, Detroit, MI 48207, 1-800-782-4356. Produced in full color and are provided in 3/4" Umatic or 1/2" VHS format. Full gamut of ASE certified programs on all sizes and types of car and truck repair. Intelligent Video Learning System (IVLS), programmed to guide the learner through instructional material, is also available.

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Live Action Videos, 1991 Media Catalog, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Good source of quality live-action videos on relevant topics within the field.

Vocational Education Software & Videos Catalog, Piney Mountain Press, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Automotive technology videos featuring Shopware Educational Systems and DRW. Graphics included.

Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 713-465-9793 or 1-800-445-1088. Contains information concerning:
PN-2000 Computerized training lab for Pneumatics and Pneutronics;
AT-2000 Computerized Training Lab for Automotive Technologies and Autotronic;
EB-2000 Computerized Training Lab for Basic and Advanced Electronics;
PT-2000 Computerized Training Lab for implementing Principles of Technology programs.

Building Trades

Books

Huth, Harry C., *Practical Problems in Mathematics for Carpenters, 5E,* 1991, New York, NY, Delmar Publishers, Two Computer Drive, West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707, FAX: 518-459-3552. Featuring applied math problems for carpenters, the book contains many problems related to mathematics that are used in "real world situations," and the graphics are excellent. This would work well as supplemental material in a lab situation; however, there is a lack of advanced math problems.

Marion, Nino, *Math for Welders,* Goodheart-Willcox Company, Inc., 123 W. Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440. A combination textbook and workbook which teaches basic mathematics skills and provides practical exercises useful in the welding field. Covers six areas of instruction including whole numbers, common fractions, decimal fractions, measurement, percentages, and metric system.

Instructional materials

Building Construction Modules, Instructional Materials Catalog, Trade and Industrial Education, 202-B Skyland Blvd., Tuscaloosa, AL 35405, 205-759-5448. Modules include: Blueprint Reading, Building Site Preparation, Cabinetmaking, Carpentry, Masonry, Plumbing, Residential Wiring.

Building Maintenance: Introduction, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Units of instruction developed for an orientation to building maintenance. Units include leadership and personal development, job application and interview, general safety, shop math, and measurement. Teacher's Guide and Student Manual.

Building Maintenance: Carpentry, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Designed as an introduction to carpentry, it includes safety, reading plans and blueprints, wall framing, roofing, doors and window units, exterior wall and trims, and interior finish. Teacher's Guide and Student Manual.

Building Maintenance: Electrical, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Developed to introduce students to electrical maintenance and repair. Units include tools and materials, circuits, volt-ohm meters, troubleshooting, minor repair, and electrical motors. Teacher's Guide and Student Manual.

Building Maintenance: Masonry, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Units developed for an introduction to masonry, including concrete finishing, tools and materials, masonry construction, and cleanup and repair. Teacher's Guide and Student Manual.

Building Trades Transparencies: Orientation, Parts I, II, III, Trade and Industrial Instructional Materials, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601. Color sets of 100 or slightly less. Sold separately. Cover adaptation possibilities for Architectural Drafting and Drafting and deal with residential construction; framing starting with foundations; and roof types, pitch, roofing materials, preparation, flashing, and shingles.

Career Opportunities Information Series, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. These cluster units contain an information sheet which provides pertinent job-related information covering the careers classified. Activities assist students in gaining a realistic perception of the nature of work. In addition, a unit test helps determine students' master of the information.

Communications & Media
Construction
Manufacturing
Public Services
Transportation

Career Opportunities Audiovisuals, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Slide/tape presentations containing full-color slides, cassette tape (English and Spanish) and an instructor's guide. Slides present workers performing actual tasks of the careers depicted, and the narrative includes information on the duties, educational/training requirements, personal qualifications, salary ranges, and employment outlooks of the careers.

Construction
Communications and Media
Manufacturing
Public Services
Transportation

Floor Framing, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Designed for the student, do-it-yourself, or professional. Contains up-to-date information on lumber, plywoods, and fasteners, along with detailed step-by-step procedures for laying out a floor frame. Manual and teacher key. 1988 Edition.

Instructional Strategies for Using Microcomputers in Vocational Education, 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Learn how you can integrate microcomputer into your curriculum following the diverse strategies and techniques of the many vocational educators who contributed to this book. Whatever your teaching field, this volume will help you make full and efficient use of microcomputer in your vocational education program. Includes contact information for each institution used as an example. Nearly 400 pages fit neatly into 3-ring binder.

PEAK: Practical Exercises in Applying Knowledge, Coordinated Occupational Information Network (COIN), 3361 Executive Parkway, Suite 302, Toledo, OH 43606, 1-800-274-8515. *PEAK* creates job simulations that demonstrate the connection between academic skills and real-life jobs. Sixty different exercises relate mathematics, science and office and marketing education to today's careers. Each subject includes a Teacher's Guide.

Trade and Industrial Education Lesson Plan Modules, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Contain plans in four academic areas: language arts, mathematics, science, and social studies. Lesson plans, in most cases, require the assistance of academic teachers for producing instructional materials for use with the lesson. Each plan references both academic and T&I essential elements. Also included is a matrix which references TAAS objectives. Areas developed include: automotive tech; auto collision repair; building trades; cosmetology; and drafting.

Vocational Math Pack, Bank, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The back portion is divided into vocational areas and all areas of vocational education are covered. Excellent for integrating. Satisfies requirements of the new Carl D. Perkins Vocational Act. Develops computational and applied math skills and terminology for vocational students in their specific training area and provides practical job-related math problem-solving.

Vocational Writing Skills Pack, Piney Mountain Press. The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. An ideal tool for initiating academic/vocational integration. Enhances communication skills for vocational students in their specific training area and provides practical job-related writing practice.

VOCT Slide Tape Presentation, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. A narrative slide/tape presentation that introduces the Vocational Opportunities Clubs of Texas. It includes information on the history and purpose of VOCT, projects and contests for VOCT members, and the election of local and area officers. Contains 75 slides, 15-minute tape, and a narrative.

Instructional materials catalogs

1992 Catalog, Delmar Publishers Inc., Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Periodicals, papers, and presentations

Harrington, Lois G., "Making Common Cause: Integrating Academic and Vocational Studies," *National Association of Secondary School Principals, Curriculum Report*, Vol. 18, No. 1, September 1988. (ED 298 656.)

Hudson, Jesse. "Insider: The T&I Division," *Vocational Education Journal*, Vol. 67, No. 1, January 1992, p. 41.

Smith, Ethel. "Insider: *NATIE*'s Many Benefits," *Vocational Education Journal*, Vol. 67, No. 1, January 1992, p. 41.

Software

Applied Mathematics Program (AMP), 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Provides the instructor with an effective tool for integrating basic academic skills into the vocational curriculum. Used with both vocational and academic instructors, *AMP* provides the teacher with a means of assessing, instructing, and testing math skills directly applied to specific occupational training programs. Provides a computerized pre-post test that diagnoses the student's math abilities. A prescription is then automatically generated which ties the student's performance to applied math activities in the workbook. After completing assigned activities in the workbook, the computer generates test items which the student may take on the computer or on paper. Finally, the program compares, saves, and prints the student's pre and post test results. Contents: six diskettes, guide, workbook, and site license each.

Building Trades Software, Trade and Industrial Instructional Materials, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601. Prepared for the following subjects: Concrete and Related Review; Carpentry and Related Review; and Building Construction and Related Review. Suitable for Apple II+, IIe, IIc, IIGS 3.5", TRS 80, III, 4, Macintosh, IBM PC MS-DOS, IBM PC 3.5. Use for student review and test construction.

Math on the Job—English on the Job, Careers, Inc., 1211 10th St., S.W., P.O. Box 135, Largo, FL 34649-0135, 1-800-726-0441. Allows special needs and at risk students an opportunity to explore careers and practice basic skills related to their exploration experiences, and provide diagnostic and remedial occupationally related skills information. Students discover how various math and English concepts and skills are used in occupations, apply these skills in the performance of selected tasks, and consider the education and training requirements for selected occupations. Thirty occupation titles. Printed computer version available.

Math On the Job

Basic competencies required on the job include the ability to:

Read, write, count, add, subtract, divide, round off, and solve work problems with whole numbers.

Read, write, add, subtract, and solve word problems with dollars and cents.

Read graduated scales.

Estimate and measure in standard units, including time, weight, and distance.

Read, write, and perform some operations with fractions.

Calculate percentages.

English on the Job

Basic competencies required on the job include the ability to:

Vocabulary—Spell words, find correct definitions, know word meanings.

Listening—Identify facts, directions, and meaning of words, make judgments.

Speaking—Use correct pronunciation, give information or directions, obtain facts.

Reading—Identify written facts, explain meaning of written materials.

Writing—Capitalization, punctuation, grammar, and write short notes conveying information; fill out forms.

Shop Talk Program, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The Shop Talk program disk will create up to 7 types of vocabulary worksheets in minutes. Words and definitions may be changed, added or new disks may be created entirely with individual's own words and definitions.

Testmaster II and Textmaster II, Lovesoft Educational Software, Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 713-465-9793. Two complete, user-friendly, menu-driven, testing/grade management systems for the Apple II. Each Data Package contains a varying number of modules. Each module includes three copyable, modifiable, and bootable student disks: test; text; and review. A hardcopy of the test, answer key, and text disk is provided along with any required worksheets.

Vocational Math For Carpentry, AAVIM Vocational Resources Catalog 1992, American Association for Vocational Instructional Materials, 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Diagnostic and teaching program of math used by carpenters including 80 practical multiple choice problems in sets of 20. Related to actual on the job situations. Apple and IBM-PC with graphics card.

Word Works 1,2,3 vocabulary development software. Pesco, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.Creates 20 different vocabulary worksheets. Career Words series has vocabulary development software for 17 vocational courses.

Software catalogs

1992 Catalog, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-624-2926. Excellent source of software and CD-Rom/Laserdiscs. Covers all facets of rapidly advancing technology.

1992 Radio Shack Educational Products Guide, Tandy Corporation/Radio Shack, 1600 One Tandy Center, Ft. Worth, TX 76102, 817-390-3091.

American Tech 1991 catalog, American Technical Publishers, Inc., 1155 West 175th Street, Homewood, IL 60430, 1-800-323-3471.

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Vocational Education Software & Videos, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent construction videos by Shopware Educational Systems and Woodworking videos by Do It Yourself.

Videos

Building Trades Videotapes, Trade and Industrial Instructional Materials, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601. Ten different VHS videotapes are devoted to a thorough visual study of a single home project and reflect the work as it is being done, while experts explain what they are doing and why. A printed project guide is furnished with each tape; tapes are not returnable.

How to Hang Doors, Bob Johnston, 1512 Deborah Rd. Ste. 100, Rio Rancho, NM 87124, *Vica Professional*, Vol. 26, No. 3, December 1991, p. 5. Complete series of classroom-length videotapes. Time-slotted for easy review. Includes Fundamentals; Interior Doors I; Interior Doors II; Interior Doors III; and Exterior Doors. Sold separately or as set.

The Video Career Library, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Contains current labor market information for each job; each tape represents a different occupational "family" from technical to service to professional. Describes job duties, working conditions, wages and salaries, job outlook, and education and training required.

Video catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Live Action Videos, 1991 Media Catalog, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Mechanics, Vocational Reading Skills, Aquarius, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. User-friendly programs with no need for teacher involvement in computer instruction. Materials are suitable for use with mainstreamed students and students with impairments and disabilities.

Vocational Education Software & Videos, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent construction videos by Shopware Educational Systems and Woodworking videos by Do It Yourself.

Electronics

Instructional materials

Electrical Trades, Trade and Industrial Instructional Materials, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601. Varied selection from Residential Wiring—Electrical Connections through Electrical Trades Basic Course, as well as Electrical Trades Basic Course Outline (competency-based) and the Electrical Trades Competency Profile.

Electrical Trades, Trade and Industrial Instructional Materials, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601. Set of 143 color transparencies; covers basic electricity, electric circuits, house wiring, and electric motors.

General Construction Trades: Electrical, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Manuals contain five units which cover safety, fundamentals of electricity, tools and materials, wiring procedures, and planning a wiring layout. Included are comprehensive illustrations which provide detailed information in every phase of the wiring process.

Gerrish, Howard H. and William E. Dugger, Jr., *Electricity and Electronics* text and lab manual, Goodheart-Wilcox Co., Inc., 123 West Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440, FAX: 708-333-9130, 1992. Provides a solid, up-to-date source of information on basic fundamentals of electricity and electronics. Provides "building block" coverage and excellent foundation in principles, circuitry and components. (See listing below under Software.)

Gerrish, Howard H., and William E. Dugger, Jr., *Transistor Electronics*, IL, Goodheart-Wilcox Co., 123 West Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440, FAX: 708-333-9130, 1992. Provides basic instruction in electricity and electronics with major emphasis on solid state components and numerous projects and experiments are included to interest and motivate students. Text explores the use of solid state components in the fields of communication, industrial controls, automation, and more.

Grob Basic Electronics, available January 1992 in its Seventh Edition. Includes more high-tech dc/ac instruction, expanded coverage of digital logic topics, 16 pages of full-color photographs and optional computer software problems. Interrelates with *IVES*

Industrial Electronics, Trade and *Industrial Instructional Materials*, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601. The Basic Course Outline includes task details, suggestions for teaching, bibliography, and is competency-based.

Instructional Strategies for Using Microcomputers in Vocational Education, 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Learn how you can integrate the microcomputer into your curriculum following the diverse strategies and techniques of the many vocational educators who contributed to this book. Whatever your teaching field, this volume will help you make full and efficient use of the microcomputer in your vocational education program. Includes contact information for each institution used as an example. Nearly 400 pages fit neatly into 3-ring binder.

Kaiser, Joe, *Electrical Power*, text and workbook, Goodheart-Wilcox Co., 123 West Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440, FAX: 708-333-9130, 1992. Provides an understanding of the principles of operation of motors, generators, transformers, and motor controls. Written in a clear and motivational manner, with good illustrations.

Matt, Stephen R., *Electricity and Basic Electronics* (text and workbook), Goodheart-Wilcox Co., 123 West Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440, FAX: 708-333-9130, 1992. Revised introductory text adds topics on superconductive material, fiber optics, and relays. Also features basic theory and fundamentals of electricity and electronics as well as projects with construction procedures.

Streib, William J., *Digital Circuits* (text, study guide/laboratory manual), Goodheart-Wilcox Co., 123 West Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440, FAX: 708-333-9130, 1992. Introductory text for courses in computer design, circuit theory, troubleshooting and servicing. Very little background in electronics is needed to understand the principles of logic circuit operation. All necessary basic theory is developed in the text. Topics include Boolean algebra, binary numbers, logic gates, buses, memory systems, adders, subtracters, logic element specification sheets, microprocessors, interfaces, and other computer systems and components.

Sullivan, Richard L., *Practical Problems in Mathematics for Electronics Technicians*, Delmar Publishers, Two Computer Drive, West, P.O. Bopx 15015, Albany, NY 12212-5015, 1-800-347-7707, FAX: 518-459-3552, 1992. Contains practical, "real world" problems which apply to math and electronics with good graphical representations. This book would be a good supplemental tool for an Algebra I classroom, even with a reduced amount of advanced math problems.

Understanding Electricity and Electrical Terms, 1989, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Written for the teacher, student, homemaker or businessperson, this publication explains electricity with a descriptive text and colorful illustrations. Contains study questions with each chapter.

Vocational Electronics, Trade and Industrial Instructional Materials, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601. First and second year transparencies.

Vocational Electronics I and II, Trade and Industrial Instructional Materials, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601. Vocational electronics course of study is divided into a two year program and includes both related information and skill lessons presented in formal five-stage lesson plans. Contains information sheets, assignment sheets, tests, and transparency masters to supplement and reinforce learning.

Vocational Math Pack, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The back portion is divided into vocational areas and all areas of vocational education are covered. Excellent for integrating. Satisfies requirements of the new Carl D. Perkins Vocational Act. Develops computational and applied math skills and terminology for vocational students in their specific training area and provides practical job-related math problem-solving.

Instructional materials catalogs

1992 Catalog, Delmar Publishers Inc., Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Periodicals, papers, and presentations

Crosby, Richard. "Insider: Developing T&I Leaders," *Vocational Education Journal,* Vol. 67, No. 1, January 1992, p. 41.

Harrington, Lois G., "Making Common Cause: Integrating Academic and Vocational Studies," *National Association of Secondary School Principals, Curriculum Report,* Vol. 18, No. 1, September 1988. (ED 298 656.)

Hudson, Jesse. "Insider: The T&I Division," *Vocational Education Journal,* Vol. 67, No. 1, January 1992, p. 41.

Smith, Ethel. "Insider: *NATIE*'s Many Benefits," *Vocational Education Journal,* Vol. 67, No. 1, January 1992, p. 41.

Software

Activ and Videotape Training Programs, Industrial Training Corporation (ITC), 13515 Dulles Technology Drive, Herndon, VA 22071-3416, 1-800-638-3757. In a study done last year at Perris High School in Perris, California, ITC's Activ (Advanced Concepts in Touch-Interactive Video) interactive videodisc training program was shown to be highly effective in improving the mathematics performances of "at-risk" 9th grade students. The students selected for this program were identified as being two or more years behind their peers academically. Fifty of these at-risk students were involved in the pilot program, and achieved remarkable results using the Activ "Applied Industrial Mathematics" program to apply mathematics skills to simulated workplace situations.

Applied Mathematics Program (AMP), 1991, Piney Mountain Press, The Education ConneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Provides the instructor with an effective tool for integrating basic academic skills into the vocational curriculum. Used with both vocational and academic instructors, *AMP* provides the teacher with a means of assessing, instructing, and testing math skills directly applied to specific occupational training programs. Provides a computerized pre-post test that diagnoses the student's math abilities. A prescription is then automatically generated which ties the student's performance to applied math activities in the workbook. After completing assigned activities in the workbook, the computer generates test items which the student may take on the computer or on paper. Finally, the program compares, saves, and prints the student's pre and post test results. Contents: six diskettes, guide, workbook, and site license each.

Trade and Industrial Instructional Materials, Texas A&M University, F.E. Box 2588, College Station, TX 77843-2588, 409-845-6601. They offer a selection of the following software in electrical trades and vocational electronics:
Electric Principles and Wiring Review, Hobar, available Apple, IBM, MacIntosh.
Ohms Law, Series, and Parallel, Hobar, available as above.
Electric Motor Review, Hobar, Apple only.
Practicing Ohm's Law, Power Law, and Resistor Circuits, Hobar, added 1991, Apple only.
Electric Principles and Wiring Technology
Game, Hobar, Apple only.

Gerrish, Howard H. and William E. Dugger, Jr., Electricity and Electronics, Goodheart-Wilcox Co., Inc., 123 West Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440, FAX: 708-333-9130, 1992. Provides a solid, up-to-date source of information on basic fundamentals of electricity and electronics. Provides "building block" coverage and excellent foundation in principles, circuitry and components. Electricity and Electronics Software is a user-friendly software package that directly correlates to the textbook. Can be used as a supplement for exploratory courses. Software consists of simulations, drill and practice sessions, and a student database to help an instructor track the students. Individual version can be installed on only one hard disk. Site license entitles the user to install the software on up to 10 different computers. Runs on most MS-DOS systems, with or without color capabilities. Can be operated from a keyboard. Available in 5.25" 360K and 3.5" 720K formats, 8 disks each. (See above listing under Instructional Materials.)

Math on the Job—English on the Job, Careers, Inc., 1211 10th St. S.W., P.O. Box 135, Largo, FL 34649-0135, 1-800-726-0441. Allows special needs and at risk students an opportunity to explore careers and practice basic skills related to their exploration experiences, and provide diagnostic and remedial occupationally related skills information. Students discover how various math and English concepts and skills are used in occupations, apply these skills in the performance of selected tasks, and consider the education and training requirements for selected occupations. Thirty occupation titles. Print and computer versions available.

Math On the Job

Basic competencies required on the job include the ability to:

Read, write, count, add, subtract, divide, round off, and solve work problems with whole numbers.

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Read graduated scales.

Estimate and measure in standard units, including time, weight, and distance.

Read, write, and perform some operations with fractions.

Calculate percentages.

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Vocabulary—Spell words, find correct definitions, know word meanings.

Listening—Identify facts, directions, meaning of words, and make judgments.

Speaking—Use correct pronunciation, give information or directions, obtain facts.

Reading—Identify written facts, explain meaning of written materials.

Writing—Capitalization, punctuation, and grammar, write short notes conveying information; fill out forms.

Microbot CIM System, Microbot, 1283-E Mountain View-Alviso Rd., Sunnyvale, CA 94089, 1-800-227-8909. Integration system of many different computer controlled devices. Both robots and controllers are designed to do a wide variety of jobs using one easy to understand programming system. CIM System includes TeachMover robot; MotorMover; electronic and pneumatic control trainers; mill and lathe; precision mover; ScaraMover robot; PickMover with programmable logic controller; as well as vision system, speech recognition/generation systems and Parts Handling Products and Software. CAD/CAM Software, VAL, and curriculum materials are an integral part of the program.

Testmaster II and Textmaster II, Lovesoft Educational Software, Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 713-465-9793. Two complete, user-friendly, menu-driven, testing/grade management systems for the Apple II. Each Data Package contains a varying number of modules. Each module includes three copyable, modifiable, and bootable student disks: Test; Text; and Review. A hardcopy of the Test, Answer Key, and Text disk is provided along with any required worksheets.

Understanding Electricity and Electrical Terms, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Software contains 50 questions taken from the text and includes review, testing, printout, random selection, and password lockout. Apple II or IBM PC.

Word Works 1,2,3, Pesco, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Vocabulary development software which creates 20 different vocabulary worksheets. Career Words series has vocabulary development software for 17 vocational courses.

Software catalogs

1992 Catalog, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-624-2926. Excellent source of software and CD-Rom/Laserdiscs. Covers all facets of rapidly advancing technology.

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Unilab catalog, handled through Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 713-465-9793.

Vocational Education Software & Videos, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent electricity & electronics videos by Shopware Educational Systems and Sullivan Software.

Videos

Electrical Series, 1991, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. This set of three videos was designed to update instructors in the area of electrical circuits and electronics. They can be used by students who have had an introduction to electrical devices or by the electronic buff.

Electronics, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992, IML, 1989-90. Nine classroom-ready modules of the latest electronics curriculum. All modules are keyed to the electronics competency profile developed by industry and secondary professionals. Series components include instructor material, reusable student references and consumable worksheets to provide a practical approach in training for careers in electronics.

Module 1: Electronic Safety
Module 2: Fundamentals of Electronics
Module 3: Digital Logic Application
Module 4: Circuit Construction Techniques
Module 5: Semiconductor Devices & Applications
Module 6: Receivers & Transmitters
Module 7: Testing & Troubleshooting
Module 8: Microprocessor & Computer Systems
Module 9: Optical Electronics
Module 10: Electromechanical Devices & Controllers.

S is for Science, 1992, Films For The Humanities & Sciences, P.O. Box 2053, Princeton, NJ 08543-2053, 1-800-257-5126. Student interest in science is declining and science courses are often perceived as boring or too difficult. This program explores some of the methods being used to reverse this trend: museums that offer hands-on participation for visitors; new technologies like interactive video disks and laser scanners; and the Network for Excellence in Teaching Science program, which shows teachers how to bring experiments to life in their classrooms (26 minutes, color).

Video catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Live Action Videos, 1991 Media Catalog, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252. Good source of quality live-action videos on relevant topics within the field.

IVES Interactive Video Training System, Glencoe, MacMillan/McGraw-Hill, P.O. Box 508, Columbus, OH 43216, 1-800-334-7344. Available January 1992. Combines power of the computer and impact of motion video and graphics. Training reinforced with hands-on skill modules and lab jobs. Glencoe's *Grob Basic Electronics* will be correlated to the *IVES* interactive video system.

Vocational Education Software & Videos, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent electricity & electronics videos by Shopware Educational Systems and Sullivan Software.

Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 713-465-9793 or 1-800-445-1088. Contains information concerning:
PN-2000 Computerized training lab for Pneumatics and Pneutronics;
AT-2000 Computerized Training Lab for Automotive Technologies and Autotronics;
EB-2000 Computerized Training Lab for Basic and Advanced Electronics; and
PT-2000 Computerized Training Lab for implementing Principles of Technology programs.

Health Occupations

Books

Simmers, Louise, *Diversified Health Occupations*, 2nd edition, U.S.A., Delmar Publishers, 1988.

Instructional Materials

Applied Biology/Chemistry, 1991, Center for Occupational Research and Development (CORD), 601C Lake Air Drive, Waco, TX 78713, 817-772-8756. High school course that uses an applications-oriented, hands-on approach to teach biology and chemistry. ABC employs student activities that relate to work and other common experiences, and uses video as an effective motivational and information medium. Targets mid 50% of vocational students and science-certified teachers if taught for science credit; home economics, agriculture, health, and technology teachers if infused or taught for vocational credit.

Career Opportunities Information, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. The Health cluster unit contains an information sheet which provides pertinent job-related information for the careers classified in the Health cluster. A unit test is included to determine students' mastery of the information.

Dental Aide, IML, 1988, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers historical foundations, infection control, basic anatomy of the oral cavity, office procedures, operative equipment and procedures, radiology and laboratory procedures.

Dental Assistant, 1991, Tuscaloosa, Instructional Materials, Trade and Industrial Education, 202-B Skyland Blvd., Tuscaloosa, AL 35405, 205-759-5448. Modules include Reception Procedures, Dental Office Management, Operating Room Procedures, and Laboratory Procedures.

Dietary Aide, IML, 1988, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers communication, telephone techniques, safety, sanitation, and nutrition.

Glylys, Barbara A., *Computer Applications for the Medical Office: Medical Care Basic Management System.*, 1990, Rittenhouse Book Distributors, Inc., 511 Feheley Drive, P.O. Box 1565, King of Prussia, PA 19406, 1-800-345-6425.

Hayden, Jerome and Howard Davis, *Fundamental Mathematics for Health Careers*, 1991, New York, NY, Delmar Publishers, Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707, FAX: 518-459-3552. Practical math application through Health careers. Best features include good simple problems from "real world" situations; however, there are not enough problems at a more advanced level that relate math to health occupations. The book would work well as a supplemental text for problem development.

Health Cluster Audiovisual, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Use of this presentation will assist students in acquiring a realistic perception of the world of work and in gaining an awareness of career opportunities in the Health cluster. Consists of a set of 35mm full-color slides, a cassette tape (narrated in both English and Spanish), and an instructor's guide.

Health Services Assistant, IML, 1989, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Combines in-depth study of the body systems with basic nursing procedures, Covers interpersonal relationships and the health care team. Communication and observation skills, safety considerations, microbiology, special procedures, vital signs and death and dying. Instructor's manual contains lesson plans and evaluations. Study manual contains information sheets only.

Health Services—Special Needs, IML, 1982, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Self-paced, self-contained instructional materials for special needs students. Fully illustrated with simplified procedural steps for easy explanation and comprehension. Covers basic nursing care, bed making, patient care, hand washing, and aide responsibilities.

Instructional Strategies for Using Microcomputers in Vocational Education, 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Learn how you can integrate the microcomputer into your curriculum following the diverse strategies and techniques of the many vocational educators who contributed to this book. Whatever your teaching field, this volume will help you make full and efficient use of the microcomputer in your vocational education program. Includes contact information for each institution used as an example. Nearly 400 pages fit neatly into 3-ring binder.

James, David & Guy Matthews, *Understanding the Biochemistry of Respiration,* 1991, Cambridge University Press, 110 Midland Avenue, Port Chester, NY 10573, 1-800-872-7423, FAX: 914-937-4712. Deals with the detailed biochemistry of cellular respiration in a clear step-by-step format. Designed to be used by undergraduate students (as well as teachers) as a resource text. Excellent integration possibilities with biology/anatomy/physiology concepts related to pathophysiology disease process for students who take care of patients with pulmonary problems.

Learning Activities: Health Care Career Areas by Conover Company, 1990, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Medication Administration, Manual, 1988, Extension Instruction/Materials Center, University of Texas, P.O. Box 7218, Austin, TX 78713-7218, 1-800-252-3461. Provides an elementary introduction for health occupation students to pharmacology; unit doses, medical orders, administration, and documentation, although it may not develop sufficient correlation to physiology and pathophysiology. It does cover well-known medications, as well as those most recently approved for patient use. An excellent possibility for integration in both math and English fields.

Murrell, George, Huang, Christopher, and Ellis, *Research in Medicine: A Guide to Writing a Thesis in the Medical Sciences*, 1990, Cambridge University Press, 110 Midland Avenue, Port Chester, NY 10573, 1-800-872-7423.

Physical Therapy Aide, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers introduction to physical therapy, introduction to patients, patient lifting and transfer techniques, draping techniques, equipment identification and storage, infection control, maintaining the treatment area, hydrotherapy, ambulating techniques for the aide, and telephone techniques.

Radiology Aide, IML, 1987, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Covers terminology, telephone techniques, radiology department records, darkroom procedures, radiation safety, infection control, transporting patients, preparing patients for examination, radiology procedures, equipment identification and maintenance, computer basics and application.

Study Packets for Clinical Rotation, 1991, Extension Instruction/Materials Center, University of Texas, P.O. Box 7218, Austin, TX 78713-7218, 1-800-252-3461. Contains subject matter for dental services, medical laboratory, nursing services, and physical therapy. Includes worksheets correlated to essential elements clinical activity checklist, case study, records, weekly report, and supervisor's evaluation sheet. However, use of this packet presupposes clinical affiliation with medical facility that accepts all items on rotation regardless of organization of the facility. Good usage for integration in that identification of skills utilized in work setting for career entry as well as post secondary education can be tied to academic disciplines in science, math, and English.

Vocational Math Pack, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The back portion is divided into vocational areas and all areas of vocational education are covered. Excellent for integrating. Satisfies requirements of the new Carl D. Perkins Vocational Act. Develops computational and applied math skills and terminology for vocational students in their specific training area and provides practical job-related math problem-solving.

Vocational Writing Skills Pack, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. An ideal tool for initiating academic/vocational integration. Enhances communication skills for vocational students in their specific training area and provides practical job-related writing practice.

Workplace English: Nurse's Aide/Assistant by Conover Company, 1990, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Workplace Math: Nurse's Aide/Assistant by Conover Company, 1990, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Instructional materials catalogs

Delmar Publishers Inc. 1992 Catalog, Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744.

Periodicals, papers, presentations

Grenn, Tommye Lou, "How I Use Computers in ......A JTPA Medical/Clerical Program, et.al." *Vocational Education Journal*, Vol. 67, No. 3, March 1992, pp. 25-29.

Harrington, Lois G., "Making Common Cause: Integrating Academic and Vocational Studies", *National Association of Secondary School Principals, Curriculum Report*, Vol. 18, No. 1, September 1988, (ED 298 656.)

Muhl, V. Jane and Joyce A. Brandt, "Insider: Recruiting Nursing Students with Tech Prep," *Vocational Education Journal*, Vol. 67 No. 1, January 1992, p. 39.

Paris Junior College, "2+2 Articulated Health Occupations Project," Paris, TX, 1989, Paris Junior College and Paris Independent School District.

Reszel, Daniel, "Building Bridges in Nursing," *Vocational Education Journal*, Vol. 66, No. 5, May 1991, pp. 32-33.

Stanton, Michael, "Health Jobs You Might Not Know About," Occupational Outlook *Quarterly*, Winter 1991-92, pp. 3-11.

Stevenson, Nancy. "Insider: A 2+2 Curriculum Where Everyone Wins," *Vocational Education Journal*, Vol. 67, No. 1, January 1992, P. 40.

Software

Applied Mathematics Program (AMP), 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Provides the instructor with an effective tool for integrating basic academic skills into the vocational curriculum. Used with both vocational and academic instructors, *AMP* provides the teacher with a means of assessing, instructing, and testing math skills directly applied to specific occupational training programs. Provides a computerized pre-post test that diagnoses the student's math abilities. A prescription is then automatically generated which ties the student's performance to applied math activities in the workbook. After completing assigned activities in the workbook, the computer generates test items which the student may take on the computer or on paper. Finally, the program compares, saves, and prints the student's pre and post test results. Contents: six diskettes, guide, workbook, and site license each.

Math on the Job—English on the Job, Careers, Inc., 1211 10th St. S.W., P.O. Box 135, Largo, FL 34649-0135, 1-800-726-0441. Allows special needs and at-risk students an opportunity to explore careers and practice basic skills related to their exploration experiences, and provide diagnostic and remedial occupationally related skills information. Students discover how various math and English concepts and skills are used in occupations, apply these skills in the performance of selected tasks, and consider the education and training requirements for selected occupations. Thirty occupations available. Print and computer versions available.

Math On the Job:

Basic competencies required on the job include the ability to:
Read, write, count, add, subtract, divide, round off, and solve work problems with whole numbers.
Read, write, add, subtract, and solve word problems with dollars and cents.
Read graduated scales.
Estimate and measure in standard units, including time, weight, and distance.
Read, write, and perform some operations with fractions.
Calculate percentages.

English on the Job:

Basic competencies required on the job include the ability to:

Vocabulary—Spell words, find correct definitions, know word meanings.

Listening—Identify facts, directions, and meaning of words, make judgments.

Speaking—Use correct pronunciation, give information or directions, obtain facts.

Reading—Identify written facts, explain meaning of written materials.

Writing—Capitalization, punctuation, and grammar, write short notes conveying information; fill out forms.

Shop Talk Program, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The Shop Talk program disk will create up to 7 types of vocabulary worksheets in minutes. Words and definitions may be changed, added or new disks may be created entirely with individual's own words and definitions.

Word Works 1, 2, 3, Pesco, Piney Mountain Press,The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Vocabulary development software that creates 20 different vocabulary worksheets. Career Words series has vocabulary development software for 17 vocational courses.

Software catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Videos

Aids and Adolescents: A Frank Discussion, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Depicts a public health educator leading a discussion with senior high students from a wide variety of backgrounds. Discussion then includes: the ways HIV virus is transmitted; incubation; the HIV antibody test; how the disease can spread through communities at large; and the prejudice shown towards people with AIDS. Second part of the program presents a discussion of ways to protect oneself from AIDS. VHS, 58 minutes.

Careers in Health, Meridian Education Corporation, 236 E. Front Street, Bloomington, IL 61701, 309-827-5455 or 1-800-727-5507. Presents overviews of several careers including both the positive and negative factors of the job. $45.00.

Health Occupations, IML, 1981, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX:

314-882-1992. Slide set covering personal care, sepsis and abbreviations. 322 slides, 7 casette tapes, instructor's guide and one student work manual.

Living With Good Health Series, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. *Drugs* and *Aids* are the two videos of this series and are designed to help students put their immediate worlds into perspective. Purpose of these videos is to promote positive morality and challenge students to take personal responsibility for their actions. Each program runs approximately 15 minutes.

Living With Your Body Series, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Series is comprised of *Understanding the Male Body*, *Understanding the Female Body*, and *Where Babies Come From*. Designed to help students put their immediate worlds into perspective. Purpose of these videos is to promote positive morality and challenge students to take personal responsibility for their actions. Each program runs approximately 15 minutes.

Math for Health Professionals, Career Publishing, Inc., 910 N. Main Street, P.O. Box 5486, Orange, CA 92613-5486, 1-800-854-4014. Designed for health professionals who need to learn the techniques used to calculate dosages for the administration of medications.

Understanding Sexuality, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Composed of two series: *Understanding Yourself and Your Body Series* (4 videos), and *Knowing Sexual Facts Series* (3 videos). These series are aimed at students, Grades 5-7, and focus on an understanding of sexuality with an interactive format between students and Martha Roper.

The Video Career Library, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Contains current labor market information for each job; each tape represents a different occupational "family" from technical to service to professional. Describes job duties, working conditions, wages and salaries, job outlook, and education and training required.

Video catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Live Action Videos, 1991 Media Catalog, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX

78731, 512-346-2326. Good source of quality live-action videos on relevant topics within the field.

Home Economics

Instructional materials

Applied Biology/Chemistry, 1991, Center for Occupational Research and Development (CORD), 601 C. Lake Air Drive, Waco, TX 76710, 1-800-848-4815. High school course that uses an applications-oriented, hands-on approach to teach biology and chemistry. ABC employs student activities that relate to work and other common experiences, and uses video as an effective motivational and information medium. Targets mid 50% of vocational students and science-certified teachers if taught for science credit; home economics, agriculture, health, and technology teachers if infused or taught for vocational credit.

Core Employment Skills, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. IML, 1990. Covers basic skills needed to find and keep a job in any chosen field, includes human relations, decision-making, personal employability skills, self-esteem, communications, math skills, and entrepreneurship.

Documentation of Core Competencies and Key Skills, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. IML, 1989. Competencies correlated to home economics in language arts, science, mathematics, and social studies to prepare students for successful and productive employment.

Fundamental Principles of Language Arts, Home Economics Curriculum Center, Texas Tech University in cooperation with Texas Education Agency, Texas Tech University, Box 41161, Lubbock, TX 79409-1161, 806-742-3029, 1991. Serves as a resource to assist home economics teachers in reinforcing academic skills while teaching the essential course content of home economics.

Fundamental Principles of Mathematics, 1991, Home Economics Curriculum Center, Texas Tech University, Box 41161, Lubbock, TX 79409-1161, 806-742-3029, Developed by Texas Tech University in cooperation with Texas Education Agency, this serves as a resource to assist home economics teachers in reinforcing academic skills while teaching the essential course content of home economics.

Fundamental Principles of Social Studies, 1991, Home Economics Curriculum Center, Texas Tech University, Box 41161, Lubbock, TX 79409-1161, 806-742-3029, Developed by Texas Tech University in cooperation with Texas Education Agency, this serves as a resource to assist home economics teachers in reinforcing academic skills while teaching the essential course content of home economics.

Integration of Mathematics, Science, and Language Arts Principles in the Home Economics Curriculum, Teacher's Guide, 1991, Home Economics Curriculum Center, Texas Tech University, Box 41161, Lubbock, TX 79409-1161, 806-742-3029, FAX: 806-742-3034. Reviews fundamental principles of mathematics, science, and language arts and suggests learning and evaluation experiences that reinforce academic principles within specific home economics content areas.

Instructional Strategies for Using Microcomputers in Vocational Education, 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Learn how you can integrate the microcomputer into your curriculum following the diverse strategies and techniques of the many vocational educators who contributed to this book. Whatever your teaching field, this volume will help you make full and efficient use of the microcomputer in your vocational education program. Includes contact information for each institution used as an example. Nearly 400 pages fit neatly into 3-ring binder.

Mathematics in Daily Living, Workbooks I-IV, 1991, Steck-Vaughn Company, P.O. Box 26015, Austin, TX 78755, 1-800-531-5015, FAX: 512-343-6854. Relates to Home Economics in that problem-solving applies to all areas of Home Economics classes; the problem solving techniques present a mathematical way to solve problems. Vocational areas are divided into their specific content areas.

Parsky, Larry, *Math for Employment,* 1991, Educational Design Inc., 47 W. 13 Street, New York, NY 10011, 1-800-221-9372. Softcover workbook which deals with basic mathematics and its application to employment. Helps students relate basic math skills to using money in real situations. In addition to computational skills, it offers work problems in an employment context. The problems are simple but intricate at times and run the gamut from identifying coins and currency to solving word problems.

Parsky, Larry, *Math for Food Service Occupations,* 1991, Educational Design, Inc., 47W 13 Street, New York, NY 10011, 1-100-221-9372. Softcover workbook which provides a review of math skills plus exploration of jobs.

Practical Math-Books 1, 2, word problems, 1991, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 512-343-8227 or 1-800-531-5015. Relates to pre-algebra and algebra. Best feature is that some word problems relate to Home Economics; however, there are more cooking word problems than other areas of Home Economics which may tend to limit.

Vocational Math Pack, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The back portion is divided into vocational areas and all areas of vocational education are covered. Excellent for integrating. Satisfies requirements of the new Carl D. Perkins Vocational Act. Develops computational and applied math skills and terminology for vocational students in their specific training area and provides practical job-related math problem-solving.

Vocational Writing Skills Pack, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. An ideal tool for initiating academic/vocational integration. Enhances communication skills for vocational students in their specific training area and provides practical job-related writing practice.

Working With Numbers Consumer Math, Workbook, 1991, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 512-343-8227 or 1-800-531-5015. Offers a refresher course in algebra. Has many problems and examples that could be integrated in lab. Contains real life written problems and demonstrates relationship to math.

Working With Numbers, Workbooks Levels 1-6, 1991, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 512-343-8227 or 1-800-531-5015. A refresher algebra workbook that presents problems and examples that could be used in lab and are real life problems that related to everyday, making this an excellent source for integration material.

Instructional materials catalogs

1992 Catalog, Delmar Publishers Inc., Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707.

Preparing Youth for a Diverse World, Home Economics Curriculum Center, 1991-92, Texas Tech University, Box 41161, Lubbock, TX 79409-1161, 806-742-3029, FAX: 806-742-30334. Entire catalog offers invaluable aid to home economics teachers.

Periodicals, papers, and presentations,

Beck, Robert H., "Home Economics Education," General Education: Vocational and Academic Collaboration, February 1991, National Center for Research in Vocational Education, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652.

Harrington, Lois G., "Making Common Cause: Integrating Academic and Vocational Studies," *National Association of Secondary School Principals, Curriculum Report*, Vol. 18, No. 1, September 1988. (ED 299 656.)

Software

Applied Mathematics Program (AMP), 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX

78731, 512-346-2326. Provides the instructor with an effective tool for integrating basic academic skills into the vocational curriculum. Used with both vocational and academic instructors, *AMP* provides the teacher with a means of assessing, instructing, and testing math skills directly applied to specific occupational training programs. Provides a computerized pre-post test that diagnoses the student's math abilities. A prescription is then automatically generated which ties the student's performance to applied math activities in the workbook. After completing assigned activities in the workbook, the computer generates test items which the student may take on the computer or on paper. Finally, the program compares, saves, and prints the student's pre- and post-test results. Contents: six diskettes, guide, workbook, and site license each.

Shop Talk Program, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The Shop Talk program disk will create up to 7 types of vocabulary worksheets in minutes. Words and definitions may be changed, added or new disks may be created entirely with individual's own words and definitions.

Word Works 1,2,3 vocabulary development software. Creates 20 different vocabulary worksheets. Career Words series has vocabulary development software for 17 vocational courses. Pesco, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Software catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Videos

Children and Movement Video Series, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Series of five videos designed as a guide for conducting a physical education program for children ages 3 to 6 years. Utilizes real teacher situations using real children, and is an excellent program for any child care setting—preschool, daycare, or at home.

Food Service: Vocabulary Module, IML, 1983, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Two units of terms: Food Service and Food Preparation. Four casette tapes, 262 slides, instructor's guide and one student work manual. Audio-visual presentation for improving comprehension of vocabulary terms in food service. Approximately 100 terms with audio cassettes and a four-slide sequence to explain each term.

How to Alter A Pattern. Meridian Education Corporation, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Making a garment to fit a particular body style is explained in a step-by-step process.

How To Sew Series: Super Time-Saving Tips, Meridian Education Corporation, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Offers ideas such as how to use your tape measure like a calculator or how to hem jeans; *Sew A Wardrobe in a Weekend* shows how to create your own designer collection of six interchangeable separates; *Re-Do a Room in a Weekend* offers creative decoration touches; *Craft and Gift Ideas* range from cutouts and boutique towels to quilted accessories.

Video catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Live Action Videos, 1991 Media Catalog, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Good source of quality live-action videos on relevant topics within the field.

Industry and Technology

Instructional Materials

Applied Basic Skills Series for Mathematics, Workbook, Extension Instruction Materials Center, University of Texas at Austin, P.O. Box 7218, Austin, TX 78713-7218, 512-471-7716, 1-800-252-3461. Features math word problems from grades 7 through 12. While there are no graphics and too much emphasis on middle school concepts, it may be used for integration purposes in careers and industrial applications fields.

Applied Biology/Chemistry course, 1991, Center for Occupational Research and Development (CORD), 601C Lake Air Drive, Waco, TX 78713, 817-772-8756. High school course that uses an applications-oriented, hands-on approach to teach biology and chemistry. ABC employs student activities that relate to work and other common experiences, and uses video as an effective motivational and information medium. Targets mid 50% of vocational students and science-certified teachers if taught for science credit; home economics, agriculture, health, and technology teachers if infused or taught for vocational credit.

Applied General Education Through Technology Education, Guide, 1991, Extension Instruction Materials Center, University of Texas at Austin, P.O. Box 7218, Austin, TX 78713-7218, 512-471-7716, 1-800-252-3461. Comprehensive curriculum guide introduces teachers to an interdisciplinary approach for technology, education, language arts, math, science, and social studies. Modules contain individualized lesson plans for each discipline with activities designed to provide an applied problem-solving learning experience for all students, centered around a common theme. The disciplinary concepts are tied together by an overlapping timetable to provide easy application and transfer of learning for students and optimum teachability for teachers.

Blueprint Special Edition. *Blueprint for Career Preparation*, February/March 1990, Sponsored and Published by Florida Department of Education; Produced by The Center for Instructional Development and Services, Florida State University.

Career Opportunities Audiovisual Instructional Presentations, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Manufacturing and Transportation cluster presentations consist of a set of 35mm full-color slides, a cassette tape (narrated in both English and Spanish), and an instructor's guide. Use of these presentations will assist students in acquiring a realistic perception of the world of work and in gaining an awareness of career opportunities in each career cluster.

Career Opportunities Information, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Cluster units contain an information sheet that provides pertinent job-related information about the careers classified in the cluster and activities that assist students in gaining a realistic perception of the nature of the work. Also available is a unit of instruction describing educational/career resources that provide additional information concerning careers of interest.

Drill Press Operator, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Units include information on operations, cutting speeds and fluids, twist drills, accessories, and basic hand and power tools. Teacher's Guide, Student Manual, and Competency Profile.

Interfacing Math, Science and Technology, Workbook, Extension Instruction & Materials Center, University of Texas at Austin, P.O. Box 7218, Austin, TX 78713-7218, 512-471-7716, 1-800-252-3461. Features a wide variety of activities which supersede the lack of visual appearance. Presents projects that apply to different areas of study and is usable for integrated work "theme" projects. Stresses the need for language arts and science in the completion of those projects; hence, a good source for integration.

Instructional Strategies for Using Microcomputers in Vocational Education, 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Learn how you can integrate the microcomputer into your curriculum following the diverse strategies and techniques of the many vocational educators who contributed to this book. Whatever your teaching field, this volume will help you make full and efficient use of the microcomputer in your vocational education program. Includes contact information for each institution used as an example. Nearly 400 pages fit neatly into 3-ring binder.

Lathe Operator, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Units include hand and power tools, headstock and carriage accessories, lathe operation, knurling, tool post grinding, filing and polishing, and cleaning the lathe. Teacher's Guide, Student Manual, and Competency Profile.

Milling Machine Operator , Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. These manuals contain information on safety, milling accessories, operation, calculations, basic hand and power tools, and metal shapes. Teacher's Guide, Student Manual, and Competency Profile.

Vocational Math Pack, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The back portion is divided into vocational areas and all areas of vocational education are covered. Excellent for integrating. Satisfies requirements of the new Carl D. Perkins Vocational Act. Develops computational and applied math skills and terminology for vocational students in their specific training area and provides practical job-related math problem-solving.

Vocational Writing Skills Pack, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. An ideal tool for initiating academic/vocational integration. Enhances communication skills for vocational students in their specific training area and provides practical job-related writing practice.

Welder's Helper, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Designed to provide the basic information and skills needed for a welder's helper. Contains units on safety, equipment used for oxyacetylene, arc, DMIG, TIG welding, and cutting torch procedures. Teacher's Guide, Student Manual, and Competency Profile.

Working With Numbers, Workbook Levels 1-6, 1991, Steck-Vaughn Company, 3520 Executive Center Drive, Austin, TX 78731, 512-343-8227 or 1-800-531-5015. A refresher algebra workbook that presents problems and examples that could be used in lab and are real life problems that related to everyday, making this an excellent source for integration material.

Instructional materials catalogs

1991 Industrial and Technical Catalog, Goodheart-Willcox, 123 West Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440, FAX: 708-333-9130. Excellent source for many T&I areas.

Delmar Publishers Inc. Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Instructional Materials Catalog, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992.

Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 713-465-9793 or 1-800-445-1088. Contains information concerning:
PN-2000 Computerized training lab for Pneumatics and Pneutronics;
AT-2000 Computerized Training Lab for Automotive Technologies and Autotronics;

EB-2000 Computerized Training Lab for Basic and Advanced Electronics; and
PT-2000 Computerized Training Lab for implementing Principles of Technology programs.

Periodicals, papers, and presentations

Bonnstetter, R., and J. Pedersen, "S/T/S for Students," *Science Scope*, Vol. 13, No. 4, 1990, p. 49. Presents an interesting, effective method for using cooperative controversy to teach science, technology, and societal issues. Written as a conversation between a son and his mother, the article provides good reading for any teacher or parent interested in cooperative learning.

Crosby, Richard. "Insider: Developing T&I Leaders," *Vocational Education Journal*, Vol, 67, No. 1, January 1992, p. 41.

Davies, D., "Computer-Supported Co-Operative Learning Systems: Interactive Groups," *Programmed Learning and Educational Technology*, Vol. 25, 1988, pp. 205-215.

Harrington, Lois G., "Making Common Cause: Integrating Academic and Vocational Studies," *National Association of Secondary School Principals, Curriculum Report*, Vol. 18, No. 1, September 1988, (ED 298 656.).

Lynch, Daniel P., "Advisory Committee for Voc Ed," *Vocational Education Journal*, Vol. 67, No. 1, January 1991, p. 34.

Software

Math on the Job—English on the Job, Careers, Inc., 1211 10th St. S.W., P.O. Box 135, Largo, FL 34649-0135, 1-800-726-0441. Allows special needs and at-risk students an opportunity to explore careers and practice basic skills related to their exploration experiences, and provide diagnostic and remedial occupationally related skills information. Students discover how various math and English concepts and skills are used in occupations, apply these skills in the performance of selected tasks, and consider the education and training requirements for selected occupations.

Math On the Job

Basic competencies required on the job include the ability to:
Read, write, count, add, subtract, divide, round off, and solve work problems with whole numbers.
Read, write, add, subtract, and solve word problems with dollars and cents.
Read graduated scales.
Estimate and measure in standard units, including time, weight, and distance.
Read, write, and perform some operations with fractions.
Calculate percentages.

English on the Job

Basic competencies required on the job include the ability to:

Vocabulary—Spell words, find correct definitions, know word meanings.

Listening—Identify facts, directions, meaning of words, and make judgments.

Speaking—Use correct pronunciation, give information or directions, obtain facts.

Reading—Identify written facts, explain meaning of written materials.

Writing—Capitalization, punctuation, grammar, write short notes conveying information; fill out forms.

Microbot CIM System, Microbot, 1283-E Mountain View-Alviso Rd., Sunnyvale, CA 94089, 1-800-227-8909. Integration system of many different computer controlled devices. Both robots and controllers are designed to do a wide variety of jobs using one easy to understand programming system. CIM System includes TeachMover robot; MotorMover; electronic and pneumatic control trainers; mill and lathe; precision mover; ScaraMover robot; PickMover with programmable logic controller; as well as vision system, speech recognition/generation systems and Parts Handling Products and Software. CAD/CAM Software, VAL, and curriculum materials are an integral part of the program.

Word Works 1,2,3, Pesco, The Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-969-2411. Vocabulary development software that creates 20 different vocabulary worksheets. Career Words series has vocabulary development software for 17 vocational courses.

Software catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Videos

Applied Mathematics, Video Tape and Workbook, Steck-Vaughn Company. Math is made relevant by showing how it is used in the workplace. Materials are categorized by vocational subject and relationships are thereby easier to view when working with integration of subjects.

The Integration of Math and Science into Technology Education, Workbook, Extension Instruction & Materials Center, P. O. Box 7218, Austin, TX 78713-7218, 1-800-252-3461. Presents projects that show math and science relationships to technology education. Could be used as a resource for "theme" project ideas.

The Video Career Library, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Contains current labor market information for each job; each tape represents a different occupational "family" from technical to service to professional. Describes job duties, working conditions, wages and salaries, job outlook, and education and training required.

Video catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Live Action Videos, 1991 Media Catalog, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Good source of quality live-action videos on relevant topics within the field.

Microcomputer Applications

Instructional Materials

Basics of Desktop Publishing, MAVCC, 1990, Educational Development and Training Center, East Texas State University, Commerce, TX 75429, 1-800-886-EDTC, FAX: 903-886-5744. For use with secondary and postsecondary students. Covers terms, hardware and software, type selection, merging graphics, document design, layout, and proofreading.

Data Processing Competency Profile, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992.

Fractions, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. Applied practice of mathematical skills in vocational settings. Covers understanding fractions, proper, improper, mixed, and equivalent fractions; converting and reducing fractions; addition, subtraction, multiplication, and division.

Instructional Strategies for Using Microcomputers in Vocational Education, 1992, American Vocational Association (AVA), Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972. Learn how you can integrate the microcomputer into your curriculum following the diverse strategies and techniques of the many vocational educators who contributed to this book. Includes contact information for each institution used as an example. Nearly 400 pages fit neatly into 3-ring binder.

Integration of Academic and Vocational Principles into Microcomputer Applications, 1991, Educational Development and Training Center, East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Lesson plan modules contain plans in four academic areas; language arts, mathematics, science, and social studies. Each plan references both academic and OE essential elements. Also included is a matrix which references TAAS objectives. These generic computer applications can be used with any software. Integrates all subjects; however, social studies skills involved are higher-level thinking skills. These ideas could be extended to include more social studies applications and computer applications.

Introduction to Microcomputer Applications, Educational Development and Training Center, East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Covers basic skills related to the operating, selection and evaluation of microcomputers and software. Instructor guide comes with 5.25" diskette, transparency masters. MAVCC, 1984.

Keyboarding and Keyboarding Applications Competency Profile, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992.

Measurement, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992, 1989. Applied practice of mathematical skills in vocational settings. Covers linear measurement, units of measurement and figuring board feet.

Office Education Lesson Plan Modules, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744. Contain plans in four academic areas: language arts, mathematics, science, and social studies. Each plan references both academic and OE essential elements. Also included is a matrix which references TAAS objectives. Areas developed include: Business Computer Applications; Business Information Processing; Microcomputer Applications; Office Administrative Systems; and Office Support Systems.

Understanding Microcomputers, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Developed to assist the beginner toward computer literacy, it is designed as a basic guide to help explain terminology with a minimum of technical jargon. Study questions are included with each chapter for review. 1987

Vocational Math Pack, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The back portion is divided into vocational areas and all areas of vocational education are covered. Excellent for integrating. Satisfies requirements of the new Carl D. Perkins Vocational Act. Develops computational and applied math skills and terminology for vocational students in their specific training area and provides practical job-related math problem-solving.

Vocational Math Supplemental Units, Instructional Materials Laboratory, University of Missouri-Columbia, 2316 Industrial Drive, Columbia, MO 65202, 1-800-669-2465, FAX: 314-882-1992. IML, 1990. Covers fractions, decimals, percents, measurement, money, division, formulas, reasoning, and problem-solving. Material is designed for the special needs student.

Vocational Writing Skills Pack, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. An ideal tool for initiating academic/vocational integration. Enhances communication skills for vocational students in their specific training area and provides practical job-related writing practice.

Working with Numbers, Workbook, 1991, Steck-Vaughn Company. P.O. Box 26015, Austin, TX 78755, 1-800-531-5015, FAX: 512-343-6854. Contains many examples and problems that could be easily integrated in a lab. Also contains many problems that relate to daily life use and the relationship of those problems to math is readily explained.

Instructional materials catalogs

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

SRA/London House Text Catalog for Business, division of Macmillan/McGraw Hill, London House, Attn.: Order Entry, 9701 W. Higgins Road, Rosemont, IL 60018, 1-800-237-7685. London House and Science Research Associates (SRA) have joined together as a division of McGraw Hill. Covers materials relating to all vocational fields, as well as personal development within the business world.

Periodicals, papers, and presentations

Harrington, Lois G., "Making Common Cause: Integrating Academic and Vocational Studies," *National Association of Secondary School Principals, Curriculum Report,* Vol. 18, No. 1, September 1988. (ED 298 656.)

Software

Applied Mathematics Program (AMP), 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Provides the instructor with an effective tool for integrating basic academic skills into the vocational curriculum. Used with both vocational and academic instructors, *AMP* provides the teacher with a means of assessing, instructing, and testing math skills directly applied to specific occupational training programs. Provides a computerized pre-post test that diagnoses the student's math abilities. A prescription is then automatically generated which ties the student's performance to applied math activities in the workbook. After completing assigned activities in the workbook, the computer generates test items which the student may take on the computer or on paper. Finally, the program compares, saves, and prints the student's pre and post test results. Contents: six diskettes, guide, workbook, and site license each.

Business Computer Applications I, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC FAX: 903-886-5744. Provides advanced concepts of word processing, spreadsheets, information management and business application software. It is suggested that individual software packages be used in this applications course.

Math on the Job—English on the Job, Careers, Inc., 1211 10th St. S.W., P.O. Box 135, Largo, FL 34649-0135, 1-800-726-0441. Allows special needs and at risk students an opportunity to explore careers and practice basic skills related to their exploration experiences, and provide diagnostic and remedial occupationally related skills information. Students discover how various math and English concepts and skills are used in occupations, apply these skills in the performance of selected tasks, and consider the education and training requirements for selected occupations. Thirty occupation titles. Print and computer versions available.

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Speaking—Use correct pronunciation, give information or directions, obtain facts.

Reading—Identify written facts, explain meaning of written materials.

Writing—Capitalization, punctuation, and grammar, write short notes conveying information; fill out forms.

Microcomputer Applications, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744, 1990. VIM Outstanding Curriculum and Instructional Materials Award winner. A cluster course designed to prepare students for advancement into an occupationally specific course. Includes sections on word processing, information processing tools, electronic spreadsheets, information management systems. Integrated software and social implications. It is suggested that an integrated software program be used.

Microcomputer Business Applications, Educational Development and Training Center, East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744, MAVCC, 1986. Job sheets and accompanying data disks coincide with APPLEWORKS and DESKMATE software. Covers electronic filing, personnel records, management, accounting, inventory control, financial records, management, communications and planning. Appropriate for all business, office and marketing programs.

Word Works 1,2,3 vocabulary development software. The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Creates 20 different vocabulary worksheets. Career Words series has vocabulary development software for 17 vocational courses.

Software catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Video Catalogs

1992 Catalog, Delmar Publishers Inc., Two Computer Drive West, P.O. Box 15015, Albany, NY 12212-5015, 1-800-347-7707.

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX 1-903-886-5744.

Career Development/Guidance

Books

Barbera-Hogan, Mary, *Straight Talk on Careers: 80 Pros Take You Into Their Professions*, Garrett Park Press, P.O. Box 190C, Garrett Park, MD 1987, 20896, 301-946-2553.

Choosing a Vocation, Garrett Park Press, P.O. Box 190C, Garrett Park, MD 20896, 301-946-2553.

Developing a Career Information Centre, Garrett Park Press, P.O. Box 190C, Garrett Park, MD 20896, 301-946-2553.

Durgin, Rod W., and Harry N. Drier, *How to Fund Career Guidance Programs*, Handbook, COIN Educational Products, 3361 Executive Parkway, Suite 302, Toledo, OH 43606, 1-800-274-8515, 1992. This handbook maps the territory of funding resources for those in career guidance. Not only is funding available, but procedures to get it are easier than imagined. The information presented here should enable readers to gain resources to provide the program they prefer.

Encyclopedia of Careers and Vocational Guidance, 7th ed., three volume set, Garrett Park Press, P.O. Box 190C, Garrett Park, MD 20896, 301-946-2553.

Federal Career Directory, Superintendent of Documents, Government Printing Office, Washington, DC 20402-9325.

Mitchell, Ruth, Testing for Learning: How New Approaches to Evaluation Can Improve American Schools, Free Press, New York, 1992,

New Emerging Careers: Today, Tomorrow, and in the 21st Century, Garrett Park Press, P.O. Box 190C, Garrett Park, MD 20896, 301-946-2553.

Periodicals, papers, and presentations

Bailey, T., "Jobs of the Future and the Education They Will Require: Evidence from Occupational Forecasts," Reprint Series MDS-319 from *Educational Researcher* of March 1991, NCRVE New Products, Catalog Supplement of January 28, 1992, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652.

Career Opportunities News, Garrett Park Press, Garrett Park, MD 20896, 301-946-2553. Six issues published each year, 12 pages each. Typical feature articles cover fields with jobs today, liberal arts and careers, free and inexpensive occupational materials, and new reports and books.

Educational Leadership, Vol. 47, No. 7, April 1990.

Feller, Rich and Joe Daly, "Counselors Tackle the New Basics," *Vocational Education Journal*, Vol. 67, No. 2, February 1992, pp. 24, 25, 55.

Harkin, Gisela, "The New Perkins Act: Career Guidance and Counseling Provisions," *AVA Guidance Division*, Vol. 18, No. 2, Spring Issue, April 1991.

"Improving our Schools," A report on IBM's support of U.S. kindergarten-through-12th-grade education, 1990, International Business Machines Corporation, Old Orchard Road, Armonk, NY 10504.

Mason, Nancy K., "Career Guidance: The Teacher's Role," *Vocational Education Journal*, Vol. 67, No. 2, February 1992, pp. 22, 23, 55.

Merina, Anita, "The Counselor's In: And That May Keep Our Youngest Students From Dropping Out Later," *NEA Today*, December 1991.

Tsuchiyama, Steve, "In Search of Buried Talents," *Administrative Radiology Journal*, 7931 N.E. Halsey, Portland, OR 97213, 503-252-3495. Idak in the News: IDAK assesses people's talents through a series of in-depth exercises or autobiographical interviews.

Washburn, John S. and Thaddeus McEwen, "Fifteen Ways to Make Time for Vocational Education," *Vocational Education Journal*, Vol. 64, No 6, September 1989, pp. 42-43.

"What's New: Assessment Tests," *Vocational Education Journal*, Vol. 66, No. 5, May 1991, p. 51.

Whitman, David et al., "The Forgotten Half", *U.S. News & World Report*, June 26, 1989, pp. 45-53.

Wilcox, John, "Preparing Students for the Real World," *Vocational Education Journal*, Vol. 66, No. 6, September 1991, pp. 38-40.

Instructional materials

100 Ways to Start the Day, The Career Education Office of the St. Louis Public Schools, 901 Locust, St. Louis, MO 63101. Designed to be used by high school educators in short blocks of time, such as an advisory period. This booklet can be used by the advisor for 10-15 minute lessons in the areas of self-awareness, career awareness, career exploration, career preparation, and survival skills. These activities help facilitate group cohesion and provide an opportunity for students to continue their personal career decision-making.

1-800-822-PLAN, Texas State Occupational Information Coordinating Committee, TEC Building, Room 526T, 15th and Congress, Austin, TX 78778. By calling and requesting information on up to three careers or colleges, free information on over 1,000 careers is mailed to students. Spanish is spoken (Se habla Espanol).

1991-1992 Educators Guide to Free Guidance Materials, 30th Annual Edition, Educators Progress Service, Inc., 214 Center Street, Randolph, WI 53956-1497, 414-326-3126. Lists more than 2,500 free films, videotapes, filmstrips, slide sets, booklets, posters, leaflets, and other printed materials needed to update textbooks around student interest and save your budget.

Amore, JoAnn, J. Michael Farr, and the Staff of the U.S. Department of Labor, *Exploring Careers: The World of Work and You*, Rev., 1990-91, Jist Works, Inc., Educational Development and Training Center, (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Reflects the latest information on equipment, procedures, and education/training requirements.

Basic Skills Applications in Career Investigation, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. The equal importance of vocational and academic education is a top priority for public education in the State of Texas. Manual includes over fifty hands-on activities which allow students to apply mathematics, science, communications, social studies and employability skills to over 75 career opportunities.

Career and Life Skills Series, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Workbooks which provide useful and specific career and life planning techniques through the use of interesting narrative, a variety of checklists, and other interactive exercises. These exercises will produce effective strategies that can be used throughout the working lifetime.

Career Awareness I, The Career Education Office of the St. Louis Public Schools, 901 Locust, St. Louis, MO 63101. Written for 7th grade students; enhances study skills, increases student awareness of many careers available, and assists students in understanding the relationship of what they learn in school to their outside lives. Units include Interests, Abilities, Values, Goals; School and Subjects and Jobs; Career Clusters; and Career Resources Around Us. Leader's Manual and Student Manual.

Career Choices: A Guide for Teens and Young Adults: Who Am I? What Do I Want? How Do I Get It? and supplemental text, *Possibilities: A Supplemental Anthology for Career Choices*, Able Publishing, 3463 State Street, Suite 219, Santa Barbara, CA 93105, 805-967-8015. Complete interdisciplinary curriculum that integrates career education with academics.

Career Education Manual for Counselors, The Career Education Office of the St. Louis Public Schools, 901 Locust, St. Louis, MO 63101. Designed to assist middle and high school counselors as they work with teachers who are using the Career Education curricula. Manual contains ideas for supplementary activities that can be used either with a Career Education curriculum or on their own. Career Cluster, Educational Training, and Career/Employment Information resources are also included.

Career Education Wall Charts, Series edited by Carl McDaniels, Virginia Polytechnic Institute and State University, Garrett Park Press, P.O. Box 190C, Garrett Park, MD 20896, 301-946-2553. Charts are revised and updated on a regular basis.

Career Planning Guide, The Rochester Area Career Education Council (*RACEC*), 930 East Avenue, Rochester, NY 14607-2241, 716-244-8834. A 36-page newspaper that serves as a valuable tool for exploring career planning. Appropriate to use in classroom situations, small group sessions and one-on-one counseling with students.

Career Preparation, The Career Education Office of the St. Louis Public Schools, 901 Locust, St. Louis, MO 63101. Written for 10th through 12th grade students, it is designed to assist students who are closer to entering the job market by providing job seeking and keeping skills as well as an additional opportunity to explore careers and practice making decisions prior to leaving high school. Units include Career Exploration, Examining Career Readiness, Identifying Job Openings, Resumes, Applications, Interviews, Work Attitudes, and How to Get Ahead.

Career Success, 1991 Guide to Career Opportunities in Texas, published by the Texas State Occupational Information Coordinating Committee, TEC Building, Room 526T, 12th and Trinity, Austin, TX 78778, 1-800-822-7526.

Career Targets Teacher's Guide, COIN Educational Products, 3361 Executive Parkway, Suite 302, Toledo, OH 43606, 1-800-274-8515. The Teacher's Guide contains an overview of the program and complete lessons plans for each page of the program including goals, suggested activities and summary concepts. It also includes a section on supplemental activities for use in academic classrooms such as home economics, math, social studies, etc.

Careers in Agribusiness and Natural Resources, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. This presentation consists of a set of 35mm full-color slides, a casette tape (English and Spanish), and an instructor's guide. Slides show workers performing actual tasks of careers depicted. Includes information concerning duties, educational/training requirements, personal qualifications, salary ranges, and employment outlooks of the careers discussed.

Careers in Medicine: Traditional and Alternative Opportunities, Revised, Edited by T. Donald Rucker and Martin D. Keller, 1990, Garrett Park Press, P.O. Box 190C, Garrett Park, MD 20896, 301-946-2553. Resource lists the various specialities open today and provides practical advice for those considering medical school.

COP System, A career awareness unit providing interest, ability and value scores keyed to Occupational clusters, job information and curriculum. EdITS, P. O. Box 7234, San Diego, CA 92167, 619-222-1666.

Dictionary of Occupational Titles, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. *The Dictionary of Occupational Titles (DOT)* has descriptions of over 20,000 jobs. Virtually every career information book or system cross-references this book. (Cross-referenced by industry and job title.)

Dictionary of Occupational Titles Supplement, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Contains over 760 new occupations and 80 job revisions to keep pace with advancing technology.

Educators Guide to Free Guidance Materials, 30th Annual Edition, Educators Progress Service, Inc., 214 Center Street, Randolph, WI 53956-1497, 414-326-3126.

Economic and Societal Factors, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Units cover job acquisition; on-the-job relations; communications; understanding the paycheck; personal money management; completing government-regulated work tasks; laws affecting you as a worker; changing jobs; and free enterprise.

Employability Skills for Cooperative Education Programs, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Contains eight units on job application and interview; safety; employer-employee relations; getting along with co-workers; salaries: where do they go?; changing jobs and resignations; labor unions; and free enterprise.

Exploring Careers, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Lots of contemporary photos of people in actual work settings and a high interest narrative about real workers complement this publication. A separate Instructor's Guide contains excellent class activities and reproducible student handouts.

Facilitator's Manual, The Rochester Area Career Education Council (*RACEC*), 930 East Avenue, Rochester, NY 14607-2241, 716-244-8834. Provides additional exercises, activities and worksheets to use with the Career Planning Guide.

Feingold, Norman, and Norma Reno Miller, *Emerging Careers: New Occupations for the Year 2000 and Beyond*, Garrett Park Press, P.O. Box 190C, Garrett Park, MD 20896, 1983, 301-946-2553. Robot technician, public affairs psychologist, technical information specialist, solar energy technician, lunar miner, neutrino astronomist, ocean engineer, and aquaculturist are just a few of tomorrow's careers described in this exciting new book.

Feingold, S. Norman, *Futuristic Exercises: A Work Book For Emerging Lifestyles and Careers in the 21st Century and Beyond, Garrett Park Press, P.O. Box 190C, Garrett Park, MD 20896,* 1989, 301-946-2553.

Flanagan Aptitude Classification Tests (FACT), U.S.A., Science Research Associates, Inc. (SRA), 1953.

Guide for Occupational Exploration, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Enhanced version that is essential for career exploration and decision making. Includes questionnaires linking school subjects, hobbies, experience, etc. to over 12,000 jobs.

Handbook of Entry Level Jobs, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. A listing of over 3,000 job titles classified under nine occupational clusters, is based on information in the *Dictionary of Occupational Titles*. 700 pages.

IDAK Career Match, IDAK Group, Banfield Plaza Building, 7931 NE Halsey, Portland, OR 97213-6755, 503-252-3495. IDAK Career Match is ideal for individuals in career transition and evaluates a person's natural talent strengths, interests and values. These are matched to recommended career options, including types of organizations and specific job functions. There are 60,000 different career options in IDAK data base and each is coded with SIC classifications.

Iglitzin, Lynne B., *Focus on Careers*, ABC-CLIO, 1991. Part of the Teenage Perspectives reference series, this guidebook offers a discussion of the world of work and the importance of making career decisions, then leads the reader through self-exploration and evaluation of career and education topics such as jobs for the future, the role of computers, college options, resume preparation and discrimination in the workforce.

Inservice Model for Strengthening Secondary Teachers' Skills in Career Counseling, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX

75429, 1-800-356-EDTC, FAX: 903-886-5744. Directed at secondary teachers, this book provides current, valid labor market information to be used with specific strategies involving students in career planning. Also provides counseling methods and principles suitable for application in all secondary classrooms.

Improved Career Decision Making in a Changing World, Developed by the Vocational Studies Center, University of Wisconsin/Madison, 1991, Garrett Park Press, P.O. Box 190, Garrett Park, MD 20896, 301-946-2553.

Mester, C. S., and R. T. Tauber, *Oral Communication Skills for Vo-Tech Students: A Competency-Based Approach*, Prakken Publications, 416 Longshore Dr., Ann Arbor, MI 48107, 1-800-530-9673. Treating an often neglected area of study in vocational curricula, this is written for the vocational student, whether studying a trade during high school or an adult returning to school.

PEAK: Practical Exercises in Applying Knowledge, Coordinated Occupational Information Network (COIN), 3361 Executive Parkway, Suite 302, Toledo, OH 43606, 1-800-274-8515. *PEAK* creates job simulations that demonstrate the connection between academic skills and real-life jobs. Sixty different exercises relate mathematics, science and office and marketing education to today's careers. Each subject includes a Teacher's Guide.

Phifer, Paul, *Career Planning Q's & A's: A Handbook for Students, Parents, and Professionals*, Garrett Park Press, P.O. Box 190C, Garrett Park, MD 20896, 1990, 301-946-2553.

Plawin, Paul, Careers for Travel Buffs & Other Restless Types, VGM Career Horizons, NTC Publishing Group, 4255 W. Touhy Ave., Lincolnwood, IL 60645-1975, 1992, 1-800-323-4900.

Prevocational Implementation Manual, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Applicable for use in all vocational education programs. Designed to provide uniformity and accountability to prevocational courses while attempting to answer many of the questions posed by administrators and instructors.

Resource Directory, The Rochester Area Career Education Council (*RACEC*), 930 East Avenue, Rochester, NY 14607-2241, 716-244-8834. Lists companies, organizations and individuals willing to provide information on careers in our area.

Work in the Economy: Careers and Job Seeking into the 21st Century, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Easy-to-read tables provide insights about which jobs will increase, stay the same, or be phased out. A special section is written for those who administer vocational training or job search programs. 303 pages, softcover.

A Young Person's Guide to Getting and Keeping a Good Job, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Information can be presented in twelve instructional hours and may also be used in academic subject areas, such as language arts and social studies. A separate instructor's guide is available to support this book and is essential for presentation in a group setting.

Instructional materials catalogs

1992-93 Catalog, Career Publishing, Inc., 910 N. Main Street, P.O. Box 5486, Orange, CA 92613-5486, 1-800-854-4014.

Career Guidance Catalog, EdITS, P.O. Box 7234, San Diego, CA 92167, 619-222-1666. Excellent catalog for career development and guidance materials.

ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744.

Software

College Application Essay Writer, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. Designed to help students write their college application essays. The program helps students brainstorm ideas, create an outline, and then write, revise, and print their final essays. Guides students through some of the most common types of college entrance essays, such as "Who are you?" and "Why do you want to go to college?" Components: Disks (not copy-protected) and User's Manual. System Requirements: Apple—128K, MS-DOS—256K.

Guidance Information Systems, GIS, Riverside Publishing Company, 2550 Beckleymeade Avenue, Suite #135, LB-14, Dallas, TX 75237, 214-631-1150. A computer tape featuring careers-training for technical and college-bound students. Useful in counseling with vocational/basic subjects related to future plans of the individual.

J.O.B.S. II: The On-Site Computerized D.O.T. Management System with Optical Scan Data Entry and Test Scoring Capabilities, Pesco International, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Gives the user the ability to update their copy of the C.O.T. as changes are made; track client performance on competencies or tasks; match clients to occupational courses and curriculum by year—required courses and recommendations on math and language based on stanines.

Job Skills Software Series by Education Associates, Inc., 1984, 1985, 1987, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Teaches the student how to make resumes, apply for a job, plan his or her life and career, and job expectations. Motivation and communication skills, successful interviewing techniques and values are taught. Apple and IBM available.

Perfect Score, Educational Resources, 1550 Executive Drive, Elgin, IL 60123, 1-800-624-2926. Six-diskette program features hundred of practice SAT questions and full explanations of correct and incorrect answers. Also includes a timed test disk that actually simulates the test-taking experience. APL/IBM/MAC.

Small Business Consultant, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Comprehensive guide to running your own business: planning and financing a small business, accounting, marketing, business with the government, personnel, liability protection, importing/exporting and information sources.

Vocational Training Inventory and Exploration Survey (Voc-Ties), Piney Mountain Press, The Education conneXtion, 12497 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Notifies and assesses students for school based training alternatives; requires no reading and may be administered individually or to a large group; promotes Voc-Ed to students, parents, and the community.

Software catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744.

Videos

Better Jobs: Using the OOH, Meridian, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. VIDEO provides an entertaining and instructional program that encourages students to explore possible occupations in the Occupational Outlook Handbook before they graduate from high school. Students can learn how the OOH is one of the many career exploration tools. Can be used with both current and future editions of the OOH.

Building A Better Texan, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. A promotional video developed to acquaint adults (educators, business and industry representatives, and community members) with the purpose and benefits of vocational education. One 15-minute videocassette.

Career Assessment Battery, Piney Mountain Press, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. This new group-administered assessment addresses 12 major worker trait clusters utilizing a video presentation.

Career Exploration: A Job Seeker's Guide to the Occupational Outlook Handbook, the Guide for Occupational Exploration, and the Dictionary of Occupational Titles, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Explaining these three career information resources is a tough job, but this video uses a visible narrator who walks viewers through the career search process and introduces them to these reference books. VHS, color, 21 minutes.

Career Opportunities, Ztek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Includes job titles, education levels, descriptions, chances for advancement, salaries, working conditions and more. Helps students make career choices.

Career Planning Steps, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 800-356-EDTC, FAX: 903-886-5744. It's Career Day and the students of Miss Waterstone's class want to know the difference between a job and a career. Demonstrates how to use the library, the career center, the Yellow Pages, and the personal interview system. 21-minutes videocassette and manual with reproducible worksheets.

Careers 2000 Fitting Into the Workforce of the 21st Century, VAP Educational Materials, 23 Meadow Drive, Camp Hill, PA 17011-8331, 717-761-3381. Offered as a complete series or as three individual videocassettes. Each is approximately 25 minutes in length and can be used independently and are accompanied by reproducible student activities. *Part I—"Where Do I Fit In?"; Part II—"Exploring Career Options,"; Part III—"Preparing NOW for Success in the Future."*

Careers for the 21st Century by Takeoff, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. This is a twelve-part series which effectively connects career opportunities to the academic courses needed for success. Available in closed-caption format for the hearing impaired.

Careers in Health, Meridian Education Corporation, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Presents overviews of several careers including both the positive and negative factors of the job.

Compute-A-Match incorporates *S.A.G.E.* and *J.O.B.S. II* systems. Meets and exceeds all state and federal requirements for classifying jobs in performing matches. Extremely comprehensive and time efficient and an excellent aid to vocational guidance. Pesco International, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Following Directions for School Success, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Techniques are offered to help students fully understand expectations such as course materials, class objectives, course assignments, tests, extra credit and when and how to reach the instructor for help. 26-minute videocassette, reproducible worksheets.

Four Steps of Interviewing, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Students learn each of the four stages of interviewing and how to be prepared to deal with the issues and questions unique to each stage. 32-minute videocassette with manual.

Handling Difficult Questions (During the Interview), Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. This full-motion video gives action examples on how to handle three types of difficult interview questions: interrogation questions, illegal questions, and skeleton questions. 31-minute videocassette with manual.

It's a New World, Wisconsin Career Information System, 1078 Educational Sciences Unit I, 1025 West Johnson Street, Madison, WI 53706, 1-800-442-4612. Encourages middle/high school students to consider the importance of mathematics and science in their future. Includes a teacher's guide and suggests ways to utilize other career development and math or science activities.

Marketing Your Vocational Skills, VAP Foundation, 23 Meadow Drive, Camp Hill, PA 17011-8331. It's no secret...getting a job is the goal of most high school graduates. With this video series you can connect the graduates' skills with today's job market. *Marketing Your Vocational Skills* makes the connection! Each of these videos is approximately 25 minutes in length and is accompanied by reproducible activity worksheets.
Part 1: Expressing Your Competencies
Part 2: Uncovering Job Opportunities
Part 3: Dealing With the Interview

Mirror Mirror, VAP Educational Materials, 23 Meadow Drive, Camp Hill, PA 17011-8331, 717-761-3381. A 10-minute video tape (VHS or Beta) which deals with a young woman's consideration of her future and eventual choice of a non-traditional career. Mirror Mirror presents a fresh, candid look at one student's self-evaluation and her need for additional emphasis on math and science skills.

Setting Career Goals The Video Way, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Helps the student set meaningful career goals, and understand that it is a life-long process. 24-minute videocassette, manual with reproducible exercises.

Setting Educational/Vocational Goals, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. This video deals with exciting educational opportunities available to students. Four settings are explored in-depth: vocational schools; jr./community colleges; colleges; universities. 22-minute videocassette and reproducible worksheets.

Why Stay in School?, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Three sets of school habits are explained in terms of their setting the foundation for future job success: *Personal Habits* such as dependability and punctuality; *Social Habits* such as getting along with classmates and future co-workers; and *Leadership Habits* involving how to interact with authority figures such as teachers and bosses.

The Winning Look, Meridian Education Corporation, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Explains the importances of dressing appropriately in the business world—for job interviewing as well as for continued success on the job. It explains ways of dressing for different situations and how the first impression you give is an important and lasting one.

Your Educational Skills: Don't Leave Home Without Them, VAP Foundation, 23 Meadow Drive, Camp Hill, PA 17011-8331, 717-761-3381. Since most students do not connect what they have learned in high school with future occupational success, this new 20-minute video cassette helps bridge that gap by illustrating how math, language and reasoning competence is needed in the fifty fastest growing jobs in the United States.

Your Resume: A Self-Portrait, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. An informative and entertaining full-motion video showing how to create an effective resume. 30-minute videocassette and manual.

Video catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 800-356-EDTC, FAX: 903-886-5744.

Creating Partnerships—Roles of Business/ Industry, Community, Administrators, Teachers

Periodicals, papers, and presentations

"Building Links Between Schools and the Workplace," *ASCD Update*, Vol. 33, No. 9, December 1991, pp. 4, 5, 8.

Davis, Bruce Conrad, "Voices: The Principal," *Educational Leadership*, Vol. 48, No. 3, December 1990/January 1991, p. 87.

Deitz, Robert, "A Different View: Education in business begins at home," *Dallas Times Herald*, September 20, 1991, p. B1.

"Education: It's time to get involved," A Policy Statement for Southwestern Bell Telephone Employees Involved in Education. For Texas locations or for specifics about information featured in booklet, contact Pearl Garza Fracchia, Southwestern Bell Telephone Company, One Bell Plaza, Room 3040, Dallas, TX 75202, 214-464-2832.

"Outstanding PPE programs recognized: Four Texas school districts receive Joe Collins Awards," *Texas Lone Star*, Vol. 10, No. 1, January/February 1992, pp. 39-40.

"Teachers in industry," *TSTA Today*, January 1992, p. 12.

The Secretary's Commission on Achieving Necessary Skills, "What Work Requires of Schools: A SCANS Report for America 2000," U.S. Department of Labor, Washington, D.C., June 1991.

"Trends And Issues Alerts: Vocational Education Involvement with Business/Industry/Labor," ERIC Clearinghouse on Adult, Career, and Vocational Education, Center on Education for Training and Employment, The Ohio State University, 1991.

"Vocational Education Involvement with Business/Industry/Labor," *Trends And Issues ALERTS*, ERIC Clearinghouse on Adult, Career, and Vocational Education, Center on Education for Training and Employment, The Ohio State University, 1991.

Wherry, John H., "Getting Parents Involved," *Vocational Education Journal*, Vol. 66, No. 6, September 1991, pp. 34, 35, 55.

"Workforce 2020 leads T&I Reform Efforts," *Vica Professional*, Vol. 26, No. 8, May 1992, p. 2.

Instructional Materials

"Bulletin Board: Publications for Parents," *Texas Lone Star News*, Vol. 3, No. 7, October 1991. Gives low-cost books and pamphlets specifically designed to help parents help their children learn.

Videos

Building A Better Texan, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 800-356-EDTC, FAX: 903-886-5744. A promotional video developed to acquaint adults (educators, business and industry representatives, and community members) with the purpose and benefits of vocational education. One 15-minute videocassette.

Guidelines for Parent-Teacher Conferences, 1992, Association for Supervision and Curriculum Development (ASCD), 1250 North Pitt Street, Alexandria, VA 22314, 703-549-9110. Winners of the 1991 Clarion Award for Informational and/or Training Videos from Women in Communications, Inc. Tape sold separately or in conjunction with following entry.

How Parents and Teachers Can Help, 1992, Association for Supervision and Curriculum Development (ASCD), 1250 North Pitt Street, Alexandria, VA 22314, 703-549-9110. Winners of the 1991 Clarion Award for Informational and/or Training Videos from Women in Communications, Inc. Tape sold separately or in conjunction with tape above.

Video catalogs

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 800-356-EDTC, FAX: 903-886-5744

Funding

Periodicals, papers, and presentations

"A New Law," *Vocational Educaiton Journal*, Vol. 67, No. 1, January 1992, p. 4.

"Apple Adds Urban Sites to Technology Consortium," *Texas Lone Star*, Vol. 9, No. 8, October 1991, p. 29.

Bark, Naomi, "Can Companies Teach Schools A Lesson?" *Working Mother*, August 1991.

Benanzer, Elizabeth, "A Rising Sun Shines on American Training," *Vocational Education Journal*, Vol. 66, No. 5, May 1991, pp. 28, 29.

"Occidental Chemical Corporation awards two-year grant to TLTG", *Texas Lone Star*, Vol. 9, No. 8, October 1991, p. 30.

"Perkins Act Questions and Answers," Supplement to *Vocational Educaiton Weekly*, American Vocational Association, 1410 King Street, Alexandria, VA 22314.

Wirt, John G., "A New Federal Law on Vocational Education: Will Reform Follow?," *Phi Delta Kappan*, Vol. 72, No. 6, February 1991, pp. 425-433.

Instructional Materials

Durgin, Rod W., and Harry N. Drier, How to Fund Career Guidance Programs, *COIN Educational Products*, 3361 Executive Pkwy., Ste. 302, Toledo, Ohio 43606, 1-800-274-8515, FAX 419-536-7056.

Educators Guide to Free Guidance Materials, 30th Annual Edition, Educators Progress Service, Inc., 214 Center Street, Randolph, WI 53956-1497, 414-326-3126.

"Grants for Teacher-Designed Programs Available," *TSTA Today*, Austin, January 1991, p. 4.

"Help America's children excel in Math and Science," an offer for schools to receive valuable math and science equipment free, such as lab kits, microscopes and computers. Covers grades K-12. Requires saving proofs of purchase from products of DowBrands, The Dow Chemical Company, and Scovill Fasteners Inc. Contact: Educate America, P.O. Box 4853, Monticello, MN 55565-4853.

"IBM Program for Innovation Grants," *IBM Education News Release*; also "IBM Program for Improving K-12 Education Through Innovative Uses of Information Technology," *International Business Machines Corporation*, Old Orchard Road, Armonk, NY 10504. Contact Rita A. Black, 914-765-6631.

"*The New Yorker* offers program for young readers," *Texas Lone Star News*, Vol. 3, No. 7, October 1991.

What is *NAEIR*? The National Association for the Exchange of Industrial Resources. *NAEIR* is a solicitor, warehouser and distributor of *FREE* merchandise to schools and non-profit organizations. Contact Nancy Roche, Vice President, Marketing, National Association for the Exchange of Industrial Resources, 560 McClure Street, P.O. Box 8076, Galesburg, IL 61402, 309-343-0704 or 1-800-562-0955.

General Integration Resources

Books

Barth, Roland S., *Improving Schools From Within*, Jossey-Bass, 1990.

Beck, R.H., *General Education: Vocational and Academic Collaboration*, National Center for Research in Vocational Education, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652. This book argues that the collaboration of teachers in vocational-technical fields with teachers of academic subjects can result in more meaningful general education. Boredom and poor academic performance can be reduced, while future citizens are more realistically schooled. The book offers illustrations of how both academic subject matter in vocational-technical and academic instruction can profit from developments in the other field. The key to this mutual profit is a collaborative interaction of teachers in the two areas.

Campbell-Thran, L. K. Manning, K. Okeafor, & E.J. Williams, *Building Basic Skills: Models for Implementation*, National Center for Research in Vocational Education, The Ohio State University, Columbus, Ohio, 1983.

Cruickshank, Donald R., *Research That Informs Teachers and Teacher Educators*, Phi Delta Kappa, Bloomington, Indiana, 1991.

Elmore, Richard, *Restructuring Schools: The Next Generation of Educational Reform*, Jossey-Bass, 1990.

Goodlad, John, *Teachers for Our Nation's Schools*, Jossey-Bass, 1990.

Goodlad, John I., *A Place Called School: Prospects for the Future*, McGraw Hill, New York, 1984.

Grubb, W.N., et al, *The Cunning Hand, The Cultured Mind: Models for Integrating Vocational and Academic Education*, Berkeley, California, 1990. Reprint July 1991, MDS-141, NCRVE New Products, Catalog Supplement of January 28, 1992, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652.

Lofen & Rosener, *Workforce America*, American Vocational Association, Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972.

Louis, Karen Seashore and Matthew B. Miles, *Improving the Urban High School: What Works and Why, Teachers College Press, New York, 1990.* (Reviewed by William A. Firestone, *Educational Leadership*, Vol. 49, No. 1, September 1991, p. 92.)

Parnell, Dale, *The Neglected Majority*, Community College Press, Washington, D.C., 1986.

Paul, Richard, *Critical Thinking: What Every Person Needs to Survive In A Rapidly Changing World*, Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940.

Powell, Arthur G., Eleanor Farrar, and David K. Cohen, *Shopping Mall High School*, American Vocational Association, Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972.

Sarason, Seymour, *The Predictable Failure of Educational Reform: Can We Change Course Before It's Too Late?* Jossey-Bass, 1990.

Sizer, Theodore R., *Horace's Compromise: The Dilemma of the American High School*, American Vocational Association, Dept. 92AB, 1410 King Street, Alexandria, VA 22314, 1-800-826-9972.

Smith, Stuart C. and James J. Scott, *The Collaborative School: A Work Environment for Effective Instruction*, copublication of Eric Clearinghouse on Educational Management and National Association of Secondary School Principals, University of Oregon, 1991. Foreword by Roland S. Barth,

Periodicals, papers, and presentations

"Are We Making the Grade?", *Texas Lone Star*, Vol. 9, No. 8, October 1991, pp. 14-15.

Bailey, T., "Jobs of the Future and the Education They Will Require: Evidence from Occupational Forecasts," Reprint Series MDS-319 from *Educational Researcher* of March 1991, NCRVE New Products, Catalog Supplement of January 28, 1992, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652.

Beck, R.H., G.H. Copa, V.H. Pease, "Vocational and Academic Teachers Work Together," Reprint Series MDS-393 from October 1991 issue of *Educational Leadership*, NCRVE New Products, Catalog Supplement of January 28, 1992, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652.

The Business Roundtable Education Public Policy Agenda, Position Paper, "Essential Components of a Successful Education System," 1991, Business Roundtable, 200 Park Avenue, Suite 2222, New York, NY 10166, 212-682-6370.

Capelli, Stephen L., "Why Must I Take Academic Courses?," *Vocational Education Journal*, Vol. 65, No. 5, September 1990, p. 42.

Copilevitz, Todd, "Mind Games," *The Dallas Morning News*, December 4, 1991, pp. C1, C4.

DeZonia, Robert H., "Interactive Video: Learning with a Difference," *Vocational Education Journal*, Vol. 65, No. 5, September 1990, pp. 36-37.

Educational Leadership, Vol. 47, No. 7, May 1990.

Educational Leadership, Vol. 48, No. 8, May 1991.

Educational Leadership, Vol. 49, No. 2, October 1991.

ERIC *Update: Basic Skills and Vocational Education*, 1991, Center on Education and Training for Employment, The Ohio State University, 1900 Kenny Road, Columbus, OH 43210, 800-848-4815. Update includes materials that have been identified through a search of the ERIC database and include bibliographic information and abstracts from both Resources in Education (RIE) and Current Index to Journals in Education (EIJE). Subjects include basic skills, problem solving, teacher responsibility, language skills, mathematics, and writing skills.

Grubb, W. Norton, "The Challenge to Change," *Vocational Education Journal*, Vol. 66, No. 2, February 1991, pp. 24-26. Reprint Series MDS-323, NCRVE New Products, Catalog Supplement of January 28, 1992, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652.

Grubb, W. N., "The Developing Vocational Education and Training System: Partnerships and Customized Training," National Association of State Directors of Vocational Education Conference, September 1990," Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652.

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Pritz, Sandra G., The Role of Vocational Education in the Development of Students' Academic Skills, 1989, Center on Education and Training for Employment, The Ohio State University, 1900 Kenny Road, Columbus, OH 43210, 1-800-848-4815. Highlights the current focus on integration of academic skills and vocational skills as a response to educational reform movements. Includes guidelines for implementation of the policies and principles of basic skills integration in vocational programs.

"Proceedings for Forum on Integrating Occupational and Academic Education," National Center for Research in Vocational Education, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652. Features papers from a number of individuals who have spearheaded exemplary programs that do, in fact, integrate occupational and academic education. Future subject matter of vocational education is also examined. This forum was sponsored by the NCRVE Inservice Project at Virginia Polytechnic Institute and State University.

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Warnat, Winifred I., "Preparing a World-Class Work Force," *Vocational Education Journal*, Vol. 66, No. 5, May 1991, pp. 22-25.

Washburn, John S. and Thaddeus McEwen, "Fifteen Ways to Make Time for Vocational Education," *Vocational Education Journal*, Vol. 64, No. 6, September 1989, pp. 42-43.

Weber, James M. and Nancy Puleo, "Dynamics of Secondary Programs Assisted Under the Carl D. Perkins Act, 1988," Center on Education and Training for Employment, The Ohio State University, 1900 Kenny Road, Columbus, OH 43210, 1-800-848-4815. Results of the nationwide study answer 26 key questions based on 13 major educational policy issues:

access and equity
adult training
articulation
at-risk students
basic skills
career guidance
currentness of vocational curricula
equipment and materials
economic development
institutional characteristics
JTPA/CBO-vocational education linkages
teacher education
transferable and higher-order skills

Due to the scope of the survey, the publication contains brief summaries of survey data gleaned from a wide spectrum of schools, classrooms, school personnel, and students. National data on the content and processes surrounding the delivery of vocational-technical education was collected for use in assessing and describing the dynamics of high school vocational programs. Topics addressed are:
instruction in vocational classrooms
variations in vocational classrooms/programs across different types of institutions
needs of at-risk students in vocational classrooms

These findings represent the first national review of secondary vocational education since enactment of the Carl D. Perkins Vocational Education Act. RD269.

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White, Roger, "Reshaping the System," *Texas Lone Star*, Vol. 8, No. 4, April 1990.

Whitman, David, et al., "The Forgotten Half," *U. S. News & World Report*, June 26, 1989, pp. 45-53.

William T. Grant Foundation, "The Forgotten Half: Pathways to Success for America's Youth and Young Families, Final Report," Commission on Work, Family and Citizenship, November 1988.

Instructional materials

Raizen, S.A., "Reforming Education for Work: A Cognitive Science Perspective," NCRVE Products Catalog, National Center for Research in Vocational Education, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652.

Instructional materials catalogs

EDTC 1991-92 Catalog, Educational Development and Training Center, East Texas State University, Commerce, TX 75429, 800-356-EDTC, FAX: 903-886-5744.

Videos

BASICS: Bridging Vocational and Academic Skills, National Center for Research in Vocational Education, 1987, Center on Education and Training for Employment, 1900 Kenny Road, Columbus, OH, 43210-1090, 1-800-848-4815. A resource package for schools interested in implementing joint academic/vocational approach.

Building A Better Texan, Educational Development and Training Center (EDTC), Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. A promotional video developed to acquaint adults (educators, business and industry representatives, and community members) with the purpose and benefits of vocational education. One 15-minute videocassette.

Implementing Effective Schools, Effective Schools Products, P.O. Box 476, Okemos, MI 48864. Larry Lezotte and panels of elementary and secondary teachers discuss the questions and concerns faced by educators implementing the school improvement process. The discussions cover topics such as teacher empowerment, site-based management and school restructuring. Of special interest is ESV4: *Implementing Effective Schools at the Secondary Level* and ESV3: *Questions Teachers Have About Implementing Effective Schools.* The video materials are designed to assist with initial planning for school improvement, as well as problem solving strategies for implementation.

Integrating Academic and Vocational Studies, National Center for Research in Vocational Education, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652. This two-hour videotape is of a teleconference which was broadcast in November of 1989. Jack Gentians, Counsel for Education, U.S. House Committee on Education and Labor, and David Evens, Staff Director, U.S. Senate Subcommittee on Education, Arts, and Humanities, presented the congressional perspective on why the integration concept was significant. Jennies Oakes, RAND Corporation, talked about research evidence bearing on academic/vocational integration and, following her presentation, a panel of four educators explored ways that integration has been implemented. This videotape was produced at the University of Minnesota site.

Integrating Academic and Vocational Skills Instruction: A Videotape of a Symposium, VAP Educational Materials, Camp Hill, PA 17011-8331, 717-761-3381. In January 1991, the Pennsylvania Council on Vocational Education Sponsored a two-day symposium on integrating academic and vocational skills instruction. The symposium featured nationally known speakers who addressed the "why" and "how" of integration. Some speakers included on the tape are: Dr. Gene Bottoms, Director, Southern Region Education Board and Dr. Darrell Parks, Director, Vocational and Career Education, State of Ohio. Segment featured is "One Model of Integration: Principles of Applied Engineering" during which Bethlehem Area Vocational Technical School Director and Bethlehem Catholic High School Principal each speak.

It's Your Life--Take Charge, 1988, Center on Education and Training for Employment, The Ohio State University, 1900 Kenny Road, Columbus, OH 43210, 1-800-848-4815. Designed to heighten student awareness of factors leading to dropping out, the need for remaining in school, and help in considering choices. Videocassette and student booklet can be used interactively or separately and with a class or single students. Materials are at a low reading level, and students find them easy to follow. Student workbook is available in English or Spanish language versions.

Restructuring America's Schools, 1991, Association for Supervision and Curriculum Development (ASCD), 1250 N. Pitt Street, Alexandria, VA 22314, 703-549-9110. This 20-minute videotape describes different elements of restructuring and explains how restructuring affects student achievement on school-level versus district-level issues. Recognition is given to how roles (administrator, teacher, parent, community) will change as restructuring occurs and also helps the viewers determine how their school or district can begin planning a restructuring effort.

Restructuring the High School: A Case Study, 1992, ASCD Order Processing, 1250 N. Pitt Street, Alexandria, VA 22314, 703-549-9110. This is an extended, in-depth exploration of one of the schools featured in this video. While *Restructuring America's Schools* explains what restructuring is and how it benefits students, *Restructuring the High School: A Case Study* provides detailed information about the restructuring process at one exemplary high school.

Schools on Trial, 1992, Films for the Humanities & Sciences, P.O. Box 2053, Princeton, NJ 08543-2053, 1-800-257-5126. Charles Nesson of Harvard Law School hosts this provocative forum in which a group of experts examines problems that arise in schools today--disruptive students, parent complaints about an incompetent teacher, and the shortage of quality teachers--and discusses solutions. The panel also looks at the general state of education today and at what is needed for the future. (52 minutes, color)

The Wrong Stuff, 1992, Films for the Humanities & Sciences, P.O. Box 2053, Princeton, NJ 08543-2053, 1-800-257-5126. When fewer than 6% of high school graduates can read a newspaper, write a cohesive essay, or solve a simple two-step arithmetic problem (according to the National Assessment of Education Progress), something is obviously wrong with the American educational system. The program illustrates how old assumptions about school administration, teaching methods, and testing are being challenged, and investigates not only what is wrong with the system, but the kinds of positive experiments that are taking place. Hosted by Judith Light, star of the TV series Who's the Boss, the program talks to education innovator Ted Sizer (whose ideas have evolved into the Coalition of Essential Schools), businessman Joe Kellman (founder of Corporate Community Schools of America), leaders of Chicago's Parent Community Council, and participants in Indianapolis' Key School experiment, which is based on Howard Gardner's theory of multiple intelligences. (58 minutes, color.)

Recommended Staff Development Topics

Awareness of Need for Restructuring

Books

Fullan, M., *The Meaning of Educational Change*, Teachers College Press, New York, 1982.

Joyce, B., and B. Showers, *Student Achievement Through Staff Development*, Longman, Inc., White Plains, New York, 1987.

Joyce, B., L. Peck, and C. Brown, Eds., *Flexibility in Teaching*, Longman, Inc., White Plains, New York, 1981.

Periodicals, papers, and presentations

Blankstein, Alan M., "Lessons from Enlightened Corporations," *Educational Leadership*, Vol. 49, No. 6, March 1992, pp. 71-75.

Camp, W.G., "On Becoming a Teacher: They Just Gave Me a Key and Said 'Good Luck'," Working Paper begun in 1988, Reprint Series MDS-377, NCRVE New Products, Catalog Supplement of January 28, 1992, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652.

Camp, W.G., "Professional Development of Teachers of Vocational Education," Reprint Series MDS-389, NCRVE New Products, Catalog Supplement of January 28, 1992, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652.

Imel, Susan, "Employers' Expectations of Vocational Education," ERIC Digest No. 90, Office of Educational Research and Improvement, U.S. Department of Education, 1989. (ERIC EDO-CE-89-90.)

Linder, Bertram L., "Staff Development Essential to Un-tracking," *Educational Leadership*, Vol. 49, No. 1, September 1991, p. 93.

"Managing Your Professional Development: A Guide for Part-Time Teachers of Adults," *ERIC Digest*, Columbus, (ERIC No. EDO-CE-90-98.)

Sudderth, C., "The Social Battleground of School Improvement," Paper delivered at the annual meeting of the American Educational Research Association, San Francisco, 1989.

"Teachers in industry," *TSTA Today*, January 1992, p. 12.

Willis, Scott, "CTRC Sets Plans," *ASCD Update*, Vol. 33, No. 2, February 1991, pp. 1, 4.

Team Building

Periodicals, papers, and presentations

Coorough, Calleen, "Tech Prep Team Building: The Key to Success is Getting Academic and Vocational Faculties to Cooperate," *Vocational Educational Journal*, Vol. 67, No. 4, April 1992.

"Education: It's time to get involved," A policy Statement for Southwestern Bell Telephone Employees Involved in Education. For Texas locations or for specifics about information features in booklet, contact Pearl Garza Fracchia, Southwestern Bell Telephone Company, One Bell Plaza, Room 3040, Dallas, TX 75202, 214-464-2832.

Vocational Education Journal, Vol. 67, No. 1, January 1992.

Books

Team Building: Top Performance Strategies, Skills for Success in the 90's, 1991-92, Turning Point for Teachers, P.O. Box 2551, Del Mar, CA 92014, 1-800-325-4769. Set of three tapes which can be used for both education and business. Designed to boost motivation and peak performance while inspiring quality work and participation.

Site-based management

Books

Bailey, William J., *School-Site Management Applied*, Technomic Publishing Company, Inc., 851 Holland Ave., Box 3535, Lancaster, PA 17604, 1-800-233-9936. A practical guide and reference for decentralization and local control of schools. Delineates the rationale of school site-based management describes the process of converting to a system of schools, outlines local school decision procedures, and promotes individual teacher empowerment.

Candou, I. Carl, *School System Administration: A Strategic Plan for Site-Based Management*, Technomic Publishing Company, Inc., 851 Holland Ave., Box 3535, Lancaster, PA 17604, 1-800-233-9936. A blueprint for realistic site-based management in school system organization. Places the current school system in a restructuring context, describes a flexible system approach for decentralization, and presents enabling techniques for effective school decision-making.

Prasch, John, *How to Organize for School-Based Managemen*t, ASCD, 1250 N. Pitt Street, Alexandria, VA 22314, 1990, 703-549-9110.

Team Building: Top Performance Strategies, Skills for Success in the 90's, 1991-1992, Tutning Point for Teachers, P.O. Box 2551, Del Mar, CA 92014, 1-800-325-4769. Set of three tapes which can be used for both education and business. Designed to boost motivation and peak performance while inspiring quality work and participation.

Periodicals, papers and presentations

"A Facilitator's Guide to the Development & Implementation of Site-Based Decision Making," *Texas Lone Star News*, Vol. 3, No. 7, October 1991, p. 4.

Clark, Judy, Ron Wideman, and Susan Eadie, *Together We Learn*, 1991, Skylight Publishing. A practical handbook designed to help teachers at all levels implement small group learning.

Foster, Jack D., "The Role of Accountability in Kentucky's Education Reform Act of 1990," *Educational Leadership*, Vol. 48, No. 5, February 1991, pp. 34-36.

Smartt, Gail, "Site-Based Management: One Principal's Perspective," *Educational Leadership*, Vol. 47, No. 8, May 1990, p. 93.

"Site-Based Decision-Making," *Region 10 Center Signal*, Vol. 13, No. 1, February 1992, p. 3.

"Site-based Decision Making: Benefits vs. Costs," *T.B.E.C. Highlights*, Vol. 2, Issue 2, May 1992, p. 1.

"TSTA Site-Based Experiments Begin," *TSTA Advocate*, October 1991, pp 4-5.

Vocational Education Journal, Vol. 67, No. 1, January 1992.

TQM

Books

Glasser, William, *The Quality School*, National Professional Resources, Inc., P.O. Box 1479, Port Chester, NY 10573, 914-937-8879. (Shown in *Educational Leadership*, Vol. 49, No. 1, September 1991, p. 82.)

Periodicals, papers, and presentations

Bonstingl, John Jay, "The Total Quality Classroom," *Educational Leadership*, Vol. 49, No. 6, March 1992, pp. 66-70.

Busler, Peg, "Teaching TQM Concepts to High School Students," *Vocational Education Journal*, Vol. 67, No. 3, March 1992, p. 21.

Carey, Art, "The United States of Incompetence, where things fall apart. "*The Dallas Morning News*, December 1, 1991, p. 4J.

Golomski, William "Total Quality Management in Higher Education," *Quality Digest*, October 1991, pp. 75-80.

Meade, Jeff, "Keeping the Customer Satisfied," *ASEE Prism*, December 1991, Vol. 65, No. 1, pp. 22, 24-25.

Mills, Marja and Pat Clawson, "More Schools Study Guaranteeing Student Skills," *The Dallas Morning News*, Saturday, December 7, 1991, p. 50A.

Sims, Henry P. Jr. and James W. Dean, Jr., "Beyond Quality Circles: Self-Managing Teams," *Personnel*, Vol. 62, No. 1, January 1985, pp. 25-32.

Network

AASA Total Quality Network, AASA Total Quality Schooling Initiative, 1801 N. Moore Street, Arlington, VA 22209, 703-875-0748. Combines the leaders, the information, and the learning needed to transform the management of America's education systems. Provides shared learning exchanges.

Learning Styles

Periodicals, papers, and presentations

A Study of the Learning Styles of Elementary Students: Low Achievers, Average Achievers, High Achievers, 1989-1990, Directed by Louise McKinney, Director, Academic Achievement Programs, Seattle Public Schools, Conducted by Pat Guild, Ed.D., Director, Graduate Programs in Education, Antioch University and former Coordinator of Learning Styles Programs at Seattle Pacific University.

Dotson, Sherrye, a nationally acclaimed authority on learning styles in secondary math classrooms, offered a 2-hour workshop on January 9, 1992 at The Colony High School from 4 to 6 p.m. Learning Styles Center, South Central Region, Learning Styles Network.

"Failing Grades A Thing of the Past," *CPL News*, Center for Success in Learning, 4949 Westgrove, #180, Dallas, TX 75248, 214-407-9277.

"TAAS Alternative Assessment," *Rains ISD*, Vol. 7, No. 3, February 1992. Approval has been received from the Texas Education Agency for the members of the South Central Region Learning Styles Network to conduct research in alternative assessment of the exit-level TAAS by accommodating the learning styles of students.

"What does TEA say about learning styles?," *Learning Styles Center Newsletter*, Vol. 1, No. 3, May 1991, p. 1.

Instructional materials

Carson, Joan C. and Ruby N. Bostick, *Math Instruction Using Media and Modality Strengths: How...it Figures*, Charles C. Thomas, Publisher, 2600 South First Street, Springfield, IL 62794-9265, 1-800-258-8980. Contents include modalities and Modality Based instruction; The auditory, visual and kinesthetic learner; effective media utilization; and selected approaches to math instruction.

Gardner, Robert, *Investigate & Discover*, 1991, Silver Burdett Press, Inc., P.O. Box 1226, Westwood, NJ 07675-1226, 1-800-843-3464. Hands-on science through at-home experiments for grades 7 and up. Expands middle-graders' understanding of the methods scientists use by presenting informative experiments. Endorsed and produced in cooperation with the Franklin Institute Science Museum of Philadelphia.

Innovations, Volume 5, "The 3V's," Karl Davidson Seminars, P.O. Box 5027, Huntsville, TX 77342-5027.

Learning Modalities: Visual, Auditory & Kinesthetic, How to Read Them & Succeed Daily, 1991-92, Turning Point for Teachers, P.O. Box 2551, Del Mar, CA 92014, 1-800-325-4769. Set of three tapes designed to boost student performance and reach the "Hard-to-Reach" students, as well as build communication, rapport, and results.

Software

Learning Styles, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Based on the C.I.T.E. Learning Styles Instrument developed by Babich, Burdine, Allbright and Randol at the Center for Innovative Teaching Experiences, Wichita Public School. Nine topics are considered. Software Pack contains five diskette lab pack, one set of reproducible response sheets, one guide and a site license. Also available as Video Version. Both versions require a printer.

Videos

Learning Styles, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Based on the C.I.T.E. Learning Styles Instrument developed by Babich, Burdine, Allbright, and Randol at the Center for Innovative Teaching Experiences, Wichita Public School. Nine topics are considered. Video version includes one enhanced videocassette, one diskette, 100 response sheets, one guide, and a site license. Also available as software pack. Both versions require a printer.

Authentic assessment

Books

Berlak, H., et al., *Toward a New Science of Educational Testing & Assessment*, SUNY Press, Albany, 1992.

Choate, J. S., et al., *Curriculum-Based Assessment and Programming*, 2nd ed., Allyn and Bacon, Boston, 1992.

Discovering the Future: the Business of Paradigms, Charthouse Learning Corporation, 221 River Ridge Circle, Burnsville, MN 55337, 1-800-328-3789. Book and Video available,

Erikson, Maureen R. and Carol A. Kochhar, *Partnership Evaluation*, National Association of Partners in Education, 1991.

Mitchell, R., *Testing for Learning: How New Approaches to Evaluation Can Improve American Schools*, Free Press, New York, 1992.

Perrone, Vito, *Expanding Student Assessment*, Association for Supervision and Curriculum Development, 1991.

Riding, R. and S. Butterfield, Eds., *Assessment and Examination in the Secondary School. A Practical Guide for Teachers and Trainers*, Routledge, New York, 1990.

Wolf, Dennie Palmer and Nancy Pistone, *Taking Full Measure*, College Board Publications, Box 886, New York, NY 10101-0886, 1991, 212-713-8143.

Periodicals, papers, and presentations

ASCD Update, Vol. 32, No. 7, September 1990.

"Council Approves National Standards, Student Exam System," *ASCD Update*, Vol. 34, No. 3, March 1992, p. 6.

Educational Leadership, Vol. 48, No. 5, February 1991.

Elson, D. E., J. D. Oliver, D. C. Strickland, and J. Perry, "Linking Planning and Evaluation: Understanding the Process in Vocational and Technical Education," study published in September 1991, Reprint Series MDS-380, NCRVE New Products, Catalog Supplement of

January 28, 1992, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652.

"Focus on Assessment," *ASCD Update*, Vol. 32, No. 7, September 1990, p. 1.

Grubb, W. Norton, "Integrating Academic and Vocational Education: Implications for Evaluation and Data Collection," DATA UPDATE, National Center for Research in Vocational Education, University of California at Berkeley, Vol. 1, No. 2, October 1989.

Halasz, Ida, "Evaluation Strategies for Vocational Program Redesign," Columbus: ERIC Digest No. 84, Clearinghouse on Adult, Career, and Vocational Education. (EDO-CE-89-84.)

Hoachlander, E. G., "Designing a Plan to Measure Vocational Education Results," *Vocational Education Journal*, Vol. 66, No. 2, February, 1991, pp. 20-21, 65.

"How Classroom Evaluation Practices Impact on Students, *The Teaching Professor*, Vol. 6, No. 3, March 1992, p. 5.

"Issue," *ASCD Update*, Vol. 32, No. 7, September 1990, p. 7.

"Issue," *ASCD Update*, Vol. 33, No. 1, January 1991, p. 7.

Juska, Jane, "Observations," *Phi Delta Kappan*, Vol. 72, No. 6, February 1991, pp. 468-470.

"Macademic: Stacks Aid Teachers in Student Assessment," *T.H.E. Journal*, Vol. 19, No. 7, February 1992, p. 60.

McCaslin, N. L., "A Framework for Evaluating Local Vocational Education Programs," order no. IN344, Publications Office, Center on Education and Training for Employment, 1900 Kenny Road, Columbus, OH 43210-1090. Urges a broader approach than just a focus on student achievement. Framework proposed describes sources of process data and outcome data and outlines steps for using the evaluation framework.

Milner, Joseph O., "Suppositional Style and Teacher Evaluation," *Phi Delta Kappan*, Vol. 72, No. 6, February 1991, pp. 464-467.

O'Neil, John, "Working Harder on Schoolwork," *ASCD Update*, Vol. 33, No. 1, January 1991, pp. 6, 8.

Stasz, C., and W.N. Grubb, "Integrating Academic and Vocational Education: Guidelines for Assessing a Fuzzy Reform," Reprint Series MDS-375, NCRVE New Products, Catalog

Supplement of January 28, 1992, Materials Distribution Service, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455, 1-800-637-7652.

Swisher, Judy, "Stepping Stones: Realistic Assessment for Special Needs Students Should Begin in Middle School," *Vocational Education Journal*, Vol. 67, No. 1, November/December 1990, pp. 36-37.

"What's New: Testing guide," *Vocational Education Journal*, Vol. 66, No. 5, May 1991, p. 51. To support a national movement to replace standardized tests with performance-based assessments, the National Center for Fair & Open Testing has released a 32-page pamphlet "Standardized Tests and Our Children: A Guide to Testing Reform." Contains sections on parents' rights, the history of testing and what test scores mean. Appendices on useful resources and testing terms are included.

"Why Teaching Portfolios?" *The Teaching Professor*, Vol. 6, No. 3, March 1992, p. 3.

Willis, Scott, "Transforming the Test," *ASCD Update*, Vol. 32, No. 7, September 1990, pp. 3-7.

"Working Harder on Schoolwork: Educators Look to Incentives, Assessments to Boost Student Effort," *ASCD Update*, Vol. 33, No. 1, January 1991, pp. 6, 8.

Instructional materials

Developing Cognitive Abilities Test, Second Edition, Comprehensive Assessment Program, American Testronics, 1-800-553-0030.

Evaluation: Whole Language, Whole Child, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. The essence of the whole language movement, including examples of programs that work, tips for parents and teachers, and suggestions for building a program in your classroom. Written for all levels.

Hill, John C., *Curriculum Evaluation for School Improvement*, University of Cincinnati, 1986, Charles C. Thomas, Publisher, 2600 South First Street, Springfield, IL 62794-9265, 1-800-258-8980.

National Achievement Test, Second Edition, Comprehensive Assessment Program, American Testronics, 1-800-553-0030.

Riverside Performance-Based Assessment, 1992, The Riverside Publishing Company, 2550 Beckleymeade Avenue, Suite 135, LB-14, Dallas, TX 75237, 1-800-442-8855. Utilized customized test development to match your own local curriculum objectives and performance-based assessments that require students to produce their own answers to questions rather than merely recognize correct answers. Spans grades K-12 in 5 subject areas and reading and writing is integrated into every assessment, including those in mathematics.

School Attitude Measure, Second Edition, Comprehensive Assessment Program, American Testronics, 1-800-553-0030.

Instructional materials catalogs

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744.

New Strategies for Assessing Mathematics, The Psychological Corporation, Harcourt Brace Jovanovich, Inc., 555 Academic Court, San Antonio, TX 78204-2498, 1-800-228-0752.

Tests and Products for Psychological Assessment, The Psychological Corporation, Harcourt Brace Jovanovich, Inc., 555 Academic Court, San Antonio, TX 78204-2498, 1-800-228-0752. Excellent source for aptitude and career interest tests.

Videos

Discovering the Future: the Business of Paradigms, Charthouse Learning Corporation, 221 River Ridge Circle, Burnsville, MN 55337, 1-800-328-3789. Book and Video available.

Redesigning Assessment, Association for Supervision and Curriculum Development (ASCD), 1250 N. Pitt Street, Alexandria, VA 22314, 703-549-9110. A 20-minute video and 60-page Facilitator's Guide help administrators, teachers, and parents review and consider authentic ways of measuring how well students are learning and applying new knowledge and skills.

Software

Grady Profile. Grady Profile facilitates portfolio-based assessment of students by teachers. Such assessment provides a holistic, in-depth understanding of student achievement. A set of HyperCard stacks, the program collects, organizes and presents information. Text, image and sound data may be included. Teachers can store their personal observations of a student and evaluations of his or her performance in the form of free-form commentary; collect samples of written or artistic work, and record, via a microphone, oral readings for replay. Standard central office data may also be included. Grady Profile requires 2MB of RAM, a hard disk, HyperCard 2.0 or later and System 6.5 or later. Intellimation, 1-800-3-INTELL.

Scholastic Graphics and Sound Booster Packs, Classroom Publishing/Presentation, Scholastic Software, 2931 East McCarty Street, P.O. Box 7502, Jefferson City, MO 65102-9968, 1-800-541-5513. Hundreds of extra pictures, sounds, and music for use with *Slide Shop*, *Super Story Tree*, and *HyperScreen* program disks. Allows borders, art and music for computer cards and greetings; images of early explorations, immigration, human rights struggles, etc.; visuals and sounds of key discoveries in transportation, medicine, and media; provides futuristic sounds, aliens, a robot repair shop, and more.

Slide Shop, Classroom Publishing/Presentation, Scholastic Software, 2931 East McCarty Street, P.O. Box 7502, Jefferson City, MO 65102-9968, 1-800-541-5513. Computer slide tool allows "slide shows," in any subject. Projects can be enhanced with slides as well as with color, sound, and special effects. System requires 128K for Apple and 256K for MS-DOS with color graphics card.

Cooperative Learning

Books

Aronson, E., and E. Goode, "Training Teachers to Implement Jigsaw Learning: A Manual for Teachers," in S. Sharan, P. Hare, C. D. Webb, and R. Hertz-Lazarowitz, Eds. *Cooperation in Education,* Brigham Young University Press, Provo, Utah, 1980.

Artzt, A. F., and C. M. Newman, *How to Use Cooperative Learning in the Mathematics Classroom,* National Council of Teachers of Mathematics, Reston, Virginia, 1990. A manual developed under the auspice of the NCTM on how to incorporate various cooperative learning strategies in mathematics classrooms across the grade levels.

Brandt, Ronald S., Ed, *Cooperative Learning and the Collaborative School: Readings from Educational Leadership,* Association for Supervision and Curriculum Development, 1991. Compilation of articles.

Clarke, J., R. Wideman, and S. Eadie, *Together We Learn,* Prentice-Hall Canada Inc., Scarborough, Ontario, Canada, 1990. Developed by a team of Canadian educators and designed as "a practical 'how-to' handbook to help teachers implement cooperative learning strategies in all subject areas and at all grade levels across Canada."

Davidson, N., "Introduction and Overview," in N. Davidson, Ed., *Cooperative Learning in Mathematics: A Handbook for Teachers,* Addison-Wesley, New York, 1990.

Graves, N. B., and T. D. Graves, Eds., *Cooperative Learning—A Resource Guide,* Available from the International Association for the Study of Cooperation in Education, 136 Liberty Street, Santa Cruz, CA 95060.

Johnson, R. T., and D. W. Johnson, "Monitoring Groups Effectively," in Johnson, R. T., D. W. Johnson, and E. J. Holubec, Eds. *Structuring Cooperative Learning: Lesson Plans for Teachers 1987,* Interaction Book Company, 7208 Cornelia, Edina, MN 55435, 1987, 612-831-9500.

Johnson, D. W., and R. T. Johnson, "Implementing Cooperative Learning: The Teachers' Role," in R.T. Johnson, D. W. Johnson, and E. J. Holubec, Eds. *Structuring Cooperative Learning: Lesson Plans for Teachers 1987,* Interaction Book Company, 7208 Cornelia, Edina, MN 55435, 1987, 612-831-9500.

Johnson, D. W., and R. T. Johnson,, "The High Achieving Student in Cooperative Learning Groups," in R. T. Johnson, D. W. Johnson, and E. J. Holubec, Eds. *Structuring Cooperative*

Learning: Lesson Plans for Teachers 1987, Interaction Book Company, 7208 Cornelia, Edina, MN 55435, 1987, 612-831-9500.

Johnson, D. W., R. T. Johnson, and E. J. Holubec, *Circles of Learning: Cooperation in the Classroom* (Revised), Interaction Book Company, Edina, Minnesota, 1986. Presents a general overview of cooperative learning, including a comprehensive definition of cooperative learning and an explanation of goal structures, learning processes, and instructional outcomes. This easy-to-read book ends with a chapter on misinformation about cooperative learning and reflections on the nature and future of it.

Johnson, D. W., and R. T. Johnson, "Social Interdependence and Self-Esteem," in Johnson, D. W. and R. T. Johnson, *Cooperation and Competition: Theory and Research*, Interaction Book Company, 7208 Cornelia, Edina, MN 55435, 1989, 612-831-9500.

Johnson, D. W., R. T. Johnson, and E. J. Holubec, "Getting Started with Cooperative Groups," in Johnson, R. T., D. W. Johnson, and E. J. Holubec, Eds. *Structuring Cooperative Learning: Lesson Plans for Teachers 1987*, Interaction Book Company, 7208 Cornelia, Edina, MN 55435, 612-831-9500.

Male, M., R. T. Johnson, D. W. Johnson, and M. Anderson, *Cooperative Learning and Computers: An Activity Guide for Teachers*, Cooperative Learning Project MN, Minnesota, 1985.

Robertson, L., N. Graves, and P. Tuck, "Implementing Group Work: Issues for Teachers and Administrators," in N. Davidson, Ed, *Cooperative Learning in Mathematics: A Handbook for Teachers*, Addison-Wesley, New York, 1990. Discusses issues affecting the use of cooperative learning in mathematics with an emphasis on teachers' decision-making and factors affecting implementation.

Slavin, R., *Cooperative Learning: Theory, Research and Practice*, National Professional Resources, Inc., P.O. Box 1479, Port Chester, NY 10573, 914-937-8879.

Periodicals, papers, and presentations

Artzt, A. F., and C. M. Newman, "Cooperative Learning," *Mathematics Teacher*, Vol. 83, No. 6, September 1990, pp. 448-452.

Bell, J., V. Clark, E. Gebo, and S. Lord, "FHA: Achieving Excellence Through Cooperative Learning," *NASSP Bulletin*, Vol. 73, 1989, pp. 114-117. Reviews the findings of studies on cooperative learning conducted by Johnson and Johnson. Explains ways in which vocational student organizations, especially Future Homemakers of America, teach these skills in conjunction with academic content of courses. Outlines a five-step planning process involved in establishing cooperative activities. Concludes with suggestions for administrators about how to support and encourage increased cooperation.

Bonnstetter, R., and J. Pedersen, "S/T/S for Students," *Science Scope*, Vol. 13, No. 4, 1990, p. 49. Presents an interesting, effective method for using cooperative controversy to teach science, technology, and societal issues. Written as a conversation between a son and his mother, the article provides good reading for any teacher or parent interested in cooperative learning.

Carson, L., and S. Hoyle, "Teaching Social Skills: A View From the Classroom," *Educational Leadership*, Vol. 47, No. 4, December 1989-January 1990, p. 31.

"Coop. Learning Shows Staying Power," *ASCD Update*, Vol. 34, No. 3, March 1992, pp. 1-2.

"Cooperative Learning in English," *English Journal*, Vol. 79, No. 6, October 1990, pp. 74-77. The editors solicited a response from public school English teachers in regard to this question: "How are you using collaborative or cooperative learning in your classroom?" Eight short responses are included.

Cooperative Learning: The Magazine for Cooperation in Education, available from the International Association for the Study of Cooperation in Education (IASCE), 136 Liberty St., Santa Cruz, CA 95060.

Davies, D., "Computer-Supported Co-Operative Learning Systems: Interactive Groups," *Programmed Learning and Educational Technology*, Vol. 25, 1988, pp. 205-215.

Duin, A. H., "Implementing Cooperative Learning Groups in the Writing Curriculum," *Journal of Teacher Writing*, Vol. 5, 1986, pp. 315-323.

Educational Leadership, Vol. 48, No. 5., February 1991.

Ellis, S., "Introducing Cooperative Learning Groups: A District-Wide Effort, "*Journal of Staff Development*, Vol. 6, 1985, pp. 52-59.

Ellis, S., "Introducing Cooperative Learning ," *Educational Leadership*, Vol. 47, No. 4, December 1989-January 1990, pp. 34-37.

Ferguson, P., "Modernization in Meiji Japan: A Jigsaw Lesson," *Social Education*, Vol. 51, 1988, pp. 393-394.

Good, T. L., B. J. Reys, D. A. Grouws, and C. M. Mulryan, "Using Work-Groups in Mathematics Instruction," *Educational Leadership*, Vol. 47, No. 4, December 1989-January 1990, pp. 56-62.

Johnson, D. W., and R. T. Johnson, "Cooperative Learning: One Key to Computer Assisted Learning," *The Computing Teacher*, Vol. 13, No. 2, 1985, pp. 11-13.

Johnson, D. W., and R. T. Johnson, "Cooperative Small-Group Learning," *Curriculum Report*, Vol. 1, 1984, pp. 1-6.

Johnson, R. T., and D. W. Johnson, "Action Research: Cooperative Learning in the Science Classroom," *Science and Children*, Vol. 13, No. 2, 1986, pp. 31-32.

Johnson, R. T., and D. W. Johnson, "Student-Student Interaction: Ignored but Powerful," *Journal of Teacher Education*, Vol. 34, 1985, pp. 22-26.

Lyman, L .K., and H. C. Foyle, "Cooperative Learning: Experiencing the Constitution in Action," Paper presented at the Rocky Mountain Regional Conference of the National Council for the Social Studies, Salt Lake City, Utah, 1988, ERIC Document Reproduction Service No. ED 293 791.

Palmer, J. J., "The Electoral College: A Jigsaw Lesson," *Social Education*, Vol. 52, 1988, pp. 306-307. A lesson for high school students. Addresses what the electoral college is and how it works.

Schultz, J. L., "Cooperative Learning: Redefining the Process," *Educational Leadership*, Vol. 47, No. 4, December 1989-January 1990, pp. 43-45.

Sherman, L. W., "A Comparative Study of Cooperative and Competitive Achievement in Secondary Biology Classrooms: The Group Investigation Model Versus an Individually Competitive Goal Structure," *Journal of Research in Science Teaching*, Vol. 26, No. 1, 1989, pp. 55-64.

Uttero, D. A., "Activating Comprehension Through Cooperative Learning," *The Reading Teacher*, Vol. 41, No. 4, 1988, pp. 390-394.

Instructional materials

61 Cooperative Learning Activities: Thinking, Writing, and Speaking Skills, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. These group activities use a whole language approach through combined thinking, writing, reading, listening, research, or speaking skills. Helps create cooperative attitudes in students. Grades 6-9.

Andiron, B., *Cooperative Learning and Mathematics: A Multi-Structural Approach*, Resources for Teachers, San Juan, Capistrano, California, 1990. Provides field-tested, step-by-step multi-structural lessons for kindergarten through 8th grade students.

Baker, Michael, *Syllogisms,* ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Develops deductive-reasoning ability and improves reading comprehension. Books are also an excellent introductory logic primer for students of all ages. Grades 2-12.

Belanca, James and Robin Fogarty, *Catch Them Thinking: A Handbook of Classroom Strategies,* ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262.

Clark, Judy, Ron Wideman, and Susan Eadie, *Together We Learn,* 1991, Skylight Publishing. A practical handbook designed to help teachers at all levels implement small group learning.

"Instructed in a Cooperative Small Investigative Group," *Science Education,* Vol. 74, No. 4, 1988, pp. 475-487. Contains model lessons that demonstrate cooperative learning strategies to promote thinking. Provides novices easily adaptable strategies, infuses thinking into the classroom, and provides new strategies for the expert. Grades 4-12.

Breeden & Mosley, *The Middle Grades Teacher's Handbook for Cooperative Learning,* ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. A simply written and well-organized handbook explaining cooperative learning. Part two provides cooperative learning units ready to implement. Grades 5-8.

Cranial Creations: 45 Cooperative Learning Activities for Life Science Classes. ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Integrates cooperative learning and critical thinking exercises in a cross-disciplinary approach. Concepts such as comparative anatomy, genetics and ecology are explored while using math, writing, art, and language arts. Grades 7 and up.

Dolomite, John H., *Dr. DOORIDDLES,* ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Associative-thinking riddles and a fun way for students to exercise critical and creative thinking skills. Grades K-12.

Fogarty, Robin and James Bellanca, *Patterns for Thinking, Patterns for Transfer,* ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Innovative staff development program offers practical strategies to help integrate curricula and assist with transfer. Offers a powerful, integrated, instructional methodology that focuses every lesson on application and transfer within content, across disciplines, and into life. Grades K-12.

Forte, Imogene & Sandra Schurr, *The Cooperative Learning Guide & Planning Pak For Middle Grades,* ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. A cooperative learning "how-to" guide with thematic units and projects for the whole year. Grades 5-8.

Forte & MacKenzie, *Pulling Together for Cooperative Learning*, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Collection of ready-to-use cooperative learning activities designed to stimulate reading, writing and reasoning skills. All are constructed for "team learning" approach. Grades 5-8.

Graham, Evelyne M., *Think-a-Grams*, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Rebus-type puzzles that provide an entertaining and challenging tool for developing right-brain thinking in coordination with left-brain memory. Three new books, A2, B2, and C2 have been created and range from easy to hard.

Johnson, R. T., and D. W. Johnson, *Cooperative Learning Warm-Ups, Grouping Strategies, and Group Activities*, 1985, Interaction Book Company, 7208 Cornelia, Edina, MN 55435, 612-831-9500. An activity booklet filled with exercises designed to reinforce and build on previous ideas for group work activities. Contains a wide assortment of lessons including warm-ups, grouping strategies, and cooperative group activities.

Johnson, D. W., and R. T. Johnson, "Social Interdependence and Self-Esteem" *in* D. W. Johnson and R. T. Johnson, Eds. Cooperation and Competition: Theory and Research, 1989. Interaction Book Company, 7208 Cornelia, Edina, MN 55435 612-831-9500.

Johnson, R. T., D. W. Johnson and E. J. Holubec, Eds., *Structuring Cooperative Learning: Lesson Plans for Teachers 1987*, Interaction Book Company, Edina, MN 55435, 612-831-9500. Features cooperative learning lesson plans by teachers who have used that process in their classrooms; also provides sample lessons for grade levels K-12 and various subject areas, including reading, language arts, mathematics, science, and social studies. Reproducible with some restrictions.

Our Link: Cooperative Learning Newsletter, available from the Cooperative Learning Center, University of Minnesota, 202 Patee Hall, 150 Pillsbury Drive, Minneapolis, MN 55455. Addresses all aspects of cooperative learning. Often includes short lesson plans, handy hints, and listings of resources.

O'Reilly, Kevin, and John Skyline, *Critical Viewing: Stimulant to Critical Thinking*, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Using class discussion and cooperative-learning techniques, *Critical Viewing* teaches students many of the marketing strategies of media professionals. Aids the student to view electronic media through questioning, educated eyes. Grades 8-college.

Software

Instant Survey, MECC, 6160 Summit Drive North, Minneapolis, MN 55430-4003, 1-800-685-MECC. This program mirrors the real world of survey research by taking advantage of students' natural curiosity and encouraging them to ask and answer questions. Working individually or in cooperative learning groups, students develop thinking skills as they learn the survey process. Planning sheets help students define the survey's purpose, predict results, investigate other sources, report results, and evaluate the decisions made. A cross-curriculum product that can be used by teachers in all disciplines. Winner of *Media & Methods* award. Grade 7-adult.

Videos

Slavin, R. A., R. T. Johnson, and D. W. Johnson (Program Consultants), *Cooperative Learning* (videotape), Alexandria, Virginia, Association for Supervision and Curriculum Development (ASCD), 1990. A five tape set of video tapes designed to communicate to staff, school board members and parents how cooperative learning increases student achievement and enhances the development of social skills. Step-by-step procedures are demonstrated for turning existing lessons into cooperative learning lessons.

Apprenticeship

Books

Hamilton, S.F., *Apprenticeship for Adulthood*, Free Press. New York. 1990,

Periodicals, papers, and presentations

"Apprenticeship," *Occupational Outlook Quarterly*, Winter 1991-92, pp. 27-40.

Carrollton-Farmers Branch Independent School District and The Metrocrest Chamber of Commerce, Technology Internship Program. Explanation of on-going program within the Carrollton-Farmers Branch ISD, Dallas, Texas.

Clinton, Bill, "Apprenticeship AMERICAN Style," *Vocational Education Journal*, Vol. 66, No. 7, October 1991, pp. 22-23.

"Conference Studies Youth Apprenticeships: An American Apprenticeship System Outlined," *Vocational Education Weekly*, Monday, January 28, 1991.

Denby, Stephen, "What Students Want," *Vocational Education Journal*, Vol. 66, No. 7, October 1991, pp. 24, 25, 68.

Glover, R.S., "Expanding the Use of Apprenticeship," A Report to the Bureau of Apprenticeship and Training, U.S. Department of Labor, 1988.

Glover, R.W., "Integrating Work, Apprenticeships, and School for Youths at Risk," Center for the Study of Human Resources, University of Texas at Austin, Austin, Texas, 1988.

Gott, S.P., " Apprenticeship Instruction for Real-World Tasks: The Coordination of Procedures, Mental Models, and Strategies," in Rothkopf, Ernest A., Ed., *Review of Research in Education*, American Educational Research Association, Washington, DC, Vol. 15, 1988-89.

Perry, Rick L., "The German Apprenticeship System," *Vocational Education Journal*, Vol. 66, No. 5, May 1991, pp. 30, 31, 46.

Raizen, Senta A. and Richard Lee Colvin, "Apprenticeships: A Cognitive-Science View," *Education Week*, December 11, 1991, p. 26.

Career Pathways

Periodicals, papers, and presentations

Leftwich, Kathy, "On the Right Track," *Vocational Education Journal*, Vol. 67, No. 4, April 1992, pp. 27-29.

Instructional materials

America's 50 Fastest Growing Jobs, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Over 20,000 job titles exist in the U.S.: however, over 80% of all workers are employed in only 300 or so. Fifty of these jobs have been selected for discussion of the skills and training required, pay rates, growth projections, working conditions, and related jobs.

Basic Skills Applications in Career Investigation, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. The equal importance of vocational and academic education is a top priority for public education in the State of Texas. Manual includes over fifty hands-on activities which allow students to apply mathematics, science, communications, social studies, and employability skills to over 75 career opportunities.

Career and Life Skills Series, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Workbooks that are not just meant to be read but used. They provide specific and pertinent career and life planning techniques through the use of interesting narrative, a variety of checklists, and other interactive exercises; and, teach practical and effective strategies that can be used throughout your working life.

Career Opportunities Information Series, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. These cluster units contain an information sheet which provides pertinent job-related information related to the careers classified in the cluster and activities which assist students in gaining a realistic perception of the nature of work associated with the cluster. A unit of instruction which describes educational/career resources is also available to provide additional information concerning careers of interest.

Career Opportunity Information	GEN-132-TG
Agri/Business	GEN-133-TG
Business & Office	GEN-134-TG
Communications & Media	GEN-135-TG

Construction	GEN-136-TG
Consumer & Homemaking	GEN-130-TG
Environment	GEN-131-TG
Fine Arts & Humanities	GEN-137-TG
Health	GEN-138-TG
Hospitality	GEN-139-TG
Manufacturing	GEN-140-TG
Marine Science	GEN-141-TG
Marketing & Distribution	GEN-142-TG
Personal Service	GEN-143-TG
Public Services	GEN-144-TG
Transportation	GEN-145-TG

Career Plan Folio, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Method used for recording students interests, aptitudes, abilities, and career and educational goals. Excellent for use in follow-up activities.

Self-Appraisal, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. These seven units will assist students in understanding themselves to help them choose the most appropriate career. Units include understanding yourself, attitudes, interests, abilities, aptitudes, leadership, and coping with change.

Instructional materials catalog

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744.

Videos

Careers Series, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Individual videos include *Marketing Specialists; Social Service Professionals; Agricultural Producers; Education and Communication Specialists; Agricultural Scientists;* and *Financial Specialists and Managers.* All videos offered in this series display employment opportunities, required degrees, preferred majors, jobs/position titles, competency-skills necessary, personality traits, and average salaries.

Family/Life Skills Video Series, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. *Find the Job World* is a live action video designed to help the viewer discover ways and places to find job openings and determine the best method of following up job leads.

The Job World Video Series, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Fourteen individual videos dealing with mental and physical preparation necessary to obtain and hold a position in the working world.

Communication Skills

Instructional materials

A Multi-Media Kit of Essential Knowledge, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The kit contains worktexts and audio cassettes which can be duplicated. Topics include dealing with consumer and transition skills; adult basic competencies; reading comprehension worktexts, communication skills, and critical thinking skills.

Videos

Video Series on Communication Skills, Meridian, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Four part series that provides an excellent overview of all forms of communications. The series presents facts and skills in all areas of communication and suggests ways to over come communication problems.

Verbal Communication	(item 3262)
Non-Verbal Communication	(item 3261)
Difficulties in Communication	(item 3263)
Media Communication	(item 3264)

Competency-based education

Periodicals, papers, and presentations

Cotton, Nancy, "Education for Economic Success: Coalition Seeks to Transform Economy by Improving Education," *Texas Lone Star*, Vol. 9, No. 1, January/February 1991, pp. 29-30.

Flowers, Jim, "Implementation of Competency-Based Education in North Carolina's High School Vocational Programs," *Journal of Vocational Education Research*, Vol. 14, No. 3, Summer 1989, pp. 53-65.

The Secretary's Commission on Achieving Necessary Skills, "What Work Requires of Schools: A SCANS Report for America 2000," U.S. Department of Labor, Washington, D.C., June 1991.

Instructional materials

Bulletin Board: Publications for Parents, *Texas Lone Star News*, Vol. 3, No. 7, October 1991. Gives low-cost books and pamphlets specifically designed to help parents help their children learn.

Cohen, Libby G. and Jo Anna Spruill, A Practical Guide to Curriculum-Based Assessment for Special Educators, Charles C. Thomas, 2600 South First Street, Springfield, IL 62794-9265, 1-800-258-8980. Without their interest in aiding teachers to improve instructional outcomes for students with special education needs, the clinical experiences of these authors convinced them that curriculum-based assessment (CBA) has the potential to improve learning outcomes, linking assessment to instruction and particularly for practitioners and college students.

Riverside Performance-Based Assessment, 1992, The Riverside Publishing Company, 2550 Beckleymeade Avenue, Suite 135, LB-14, Dallas, TX 75237, 1-800-442-8855. Utilized customized test development to match your own local curriculum objectives and performance-based assessments that require students to produce their own answers to questions rather than merely recognize correct answers. Spans grades K-12 in 5 subject areas and reading and writing is integrated into every assessment, including those in mathematics.

Instructional materials catalogs

1992 Catalog, Developed by CETE, published and distributed by American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689.

Videos

An Introduction to Competency-Based Administrator Education, developed by CETE, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. This 1/2" VHS color videotape presents a general overview of the Center's CBAE curricular program. Included are explanations of (1) the need for CBAE, (2) characteristics of CBAE, (3) the research base on which the materials are built, (4) the development and testing processes used in producing the materials, and (5) the characteristics and format of the materials. Item V-4LT.

Software

System 2001: The Instructional Planner and Progress Tracker, Ed-Tech Systems, Inc., P.O. Box 994, College Station, TX 77841, 409-779-0124. The System can be used to define the basic and advanced academic skills required of a job, or a course of instruction. A nationally developed taxonomy of basic and essential skills in mathematics, language arts and science is employed in the analysis process.

Decision Making Skills

Periodicals, papers, and presentations

Kissel, Kelly P., "Sociology Teacher Uses Game to Show Rich Get Richer," *Las Vegas-Review Journal,* March 5, 1992, p. 11.

Schargel, Franklin P., "Promoting Quality in Education," *Vocational Education Journal,* Vol. 66, No. 8, November/December 1991, pp. 34-35.

Instructional Materials Organization: The Center for Critical Thinking, Sonoma State University, Rohnert Park, CA 94928, has curriculum and will hold the Annual International Conference on Critical Thinking & Educational Reform at Sonoma State University, August 9-12, 1992.

Basic Skills

Periodicals, papers, and presentations

Carnevale, A. P., L. J. Gainer, and A. S. Meltzer, "Workplace Basics: The Skills Employers Want," Alexandria, Virginia, American Society for Training and Development, Washington, DC: Employment and Training Administration, U.S. Department of Labor, 1988, ERIC Document Reproduction Service No. ED 299 462.

"Knowing What to Teach When," *ASCD Update*, Vol. 33, No. 1, January 1991, pp. 1-2

O'Connell, Rosanne M. "Adaptable Skills: A Global Economy," *Punchline*: a newsletter for business educators from The H.M. Rowe Company, Fall 1990.

The Secretary's Commission on Achieving Necessary Skills, "What Work Requires of Schools: A *SCANS* Report for America 2000," U.S. Department of Labor, Washington, D.C., June 1991.

"Transferable Skills: An Administrator's Guide", The Center on Education and Training for Employment, Publications Office, Box C, The Ohio State University, 1900 Kenny Road, Columbus, OH 43210-1090, 1-800-848-4815 or 614-292-4353. This guide presents examples of transferable skills and reviews instructional strategies that can be employed to teach them. Examples of broadly applicable skills are also presented.

Instructional materials

Economic and Societal Factors, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 800-356-EDTC, FAX: 903-886-5744. Units cover job acquisition; on-the-job relations; communications; understanding the paycheck; personal money management; completing government-regulated work tasks; laws affecting you as a worker; changing jobs; and free enterprise.

I Am Already Successful: Getting Motivated, Being Me, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 800-356-EDTC, FAX: 903-886-5744. Increase your student's self-esteem, confidence and motivation. This workbook. will help to build concrete verbal and written communication skills, planning, organizing, cooperation, and goal setting.

Project Get That Job, Educational Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Helps your students develop attitudes and competencies for success in the world of work.

Saphier, Jon, Tom Bigda-Peyton, and Geoff Pierson, *How to Make Decisions that Stay Made*, 1989, ASCD, 1250 N. Pitt Street, Alexandria, VA 22314, 703-549-9110 or FAX: 703-549-3891, Stock #611-89132NB.

Skills for Career Success, Educational Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Role-playing activities that focus on: Asking for Help, Giving Help, Accepting Criticism, and Giving Criticism.

Wanat, John A., E. Weston Pfeiffer, and Richard VanGulik, Learning for Earning, 1991, Goodheart-Willcox Co. Inc., 123 West Taft Drive, South Holland, IL 60473-2089, 1-800-323-0440. Designed to introduce younger students to the skills they will need to succeed in school, on the job, and on their own, it guides students through steps in choosing a career, finding employment, and succeeding on the job, as well as how to manage money and satisfy housing and transportation needs.

Catalogs

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC. FAX: 903-886-5744.

Software

The Creative Resume, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. A resume package which may be used to teach students how to create attractive resumes which best represent their abilities. Package includes one disk with backup, two blank diskettes, one copy of Putting It in Writing, one copy of Successful Transitions, and User's notes.

Living With Your Paycheck: Developing a Budget, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Teaches the importance of understanding paycheck deductions, how to calculate gross pay, and how to arrive at the net amount. Apple and IBM.

Small Business Consultant, Z-tek Co., P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Comprehensive guide to running your own business: planning and financing a small business, accounting, marketing, business with the government, personnel, liability protection, importing/exporting, and information sources.

Successful Job Interviewing, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Helps students improve their interviewing skills and better understand the interviewing process. Apple and IBM.

Software catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Videos

The Apartment Rental Game, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. An entertaining, full-motion video is a complete guide to finding comfortable, affordable apartment housing that meets your needs. Topics include lease agreements, security deposits, house rules and waivers, renting terminology and what to ask about an apartment before renting.

Building A Better Texan, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. A promotional video developed to acquaint adults (educators, business and industry representatives, and community members) with the purpose and benefits of vocational education. One 15-minute videocassette.

Clothing Dollars and Sense, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Program helps develop the skills needed to make wise decisions when purchasing clothing.

Effective Answers to Interview Questions, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Two young job seekers, male and female, learn a systematic technique to answer the interview questions which often unnerve job seekers.

How to Buy a Used Car, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Helps teenagers or anyone avoid costly mistakes when buying a used car. Includes tips on budgeting ongoing expenses for insurance, license, taxes and operation.

How to Get the Job You Want, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Gives an overview of the basic techniques for a successful job search. Program includes 60 minute video, 138 page workbook, *Getting the Job You Really Want,* and 64 page Instructor's guide.

How To Say No, Meridian Education Corporation, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. This video encourages students to break free of peer pressure, good or bad, in order to become their own person. The program includes critical thinking skills and refusal tactics, with role play examples.

Job Skills Video Series by Education Associates, Inc., 1987, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Fourteen live-action, color videos which are designed to encourage successful job hunting through a variety of topics. Students will learn how to job hunt, keep the job, and the on-the-job skills; the importance of selling themselves to the employer; how to manage their pay checks; and how to motivate themselves and others.

Job Survival Skills: It's a Jungle Out There!, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. The job market really is a jungle of sorts, and you have to learn the ropes to survive. Yet there are things that can increase a person's chance for job survival and success. Video is 18 minutes. Included are workbook *Getting the Job You Really Want* and the workbook's Instructor's Guide.

Making It On Your First Job, 1989, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Program utilizes a dialogue format highlighted with testimonials from entry-level workers and their supervisors to emphasize the need for developing adaptive skills and positive attitudes. One 30-minute videocassette and program guide.

Managing Your Personal Finances, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Survival in a credit economy means knowing how to handle personal income and expenses, how to develop credit worthiness and avoid financial pitfalls by practicing sound financial management. Video was designed to teach students the basic fundamentals of handling personal finances.

The Miracle Resume: Creating Effective Resumes, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Video begins with a bumbling comic named Wayne Miracle who isn't making it in the humor business, needs to find another line of work, and needs a resume. Within this context, basic resume writing tips are more interesting and memorable.

Money Management Skills, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Help your students develop good money management skills such as figuring gross pay, making a budget, and using a checking account. Full motion 15-minute video.

The Road to Wise Money Management, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Balancing checkbooks, understanding bank statements, getting credit are all complex and intimidating but necessary skills. Includes taxes and handling an ATM. Includes one 30-minute video and student guide.

The Seven Phases of a Job Interview, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. The seven phases are presented in humorous scenarios--all spoofs on recognizable cinematic styles. Taken from J. Michael Fears new book, *Job Finding Fast*. Video runs 38 minutes.

Social Skills at Work, Educational Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Explains what social skills are and why they are important. Designed to inform and prompt discussion about working cooperatively, listening to criticism, and knowing when to speak up or be quiet.

Surviving the Checkout: Wise Food Buying, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Shows how to make wise food buying decisions by pre-planning meals for the week.

Thank You For Calling!: Effective Telephone Techniques, 1991, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Provides students with basic skills needed to handle all types of business telephone communications. One 30-minute videocassette and student workbook.

Values, Decisions, Success: Job Ethics, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. 14 minute video examines values needed for success in getting and keeping a job.

Video Series on Communication Skills, Meridian, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Four part series that provides an excellent overview of all forms of communications. The series presents facts and skills in all areas of communication and suggests ways to over come communication problems.
Verbal Communication
Non-Verbal Communication
Difficulties in Communication
Media Communication

Your Appearance I: The Interview, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. This full motion video presents five applicants in interview situations. In each case, the applicant's appearance determines the outcome of the interview. The value of a good first impression is stressed. VHS or filmstrip.

Your Appearance II: On the Job, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Shows students the ways in which appearance influences job retention and promotion. Instances where supervisors and co-workers base their impressions strictly on appearance are shown. VHS or filmstrip.

Your Job: Now It's Up to You: Developing Good Working Relationships, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Help your students develop good working relationships with this full motion video. Stresses the importance of having a neat appearance and positive attitude, accepting criticism in a positive manner, and doing work the way the supervisor wants it done.

Video catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744.

Empowerment

Books

Saphier, Jon, Tom Bigda-Peyton, and Geoff Pierson, *How to Make Decisions that Stay Made,* ASCD, 1250 N. Pitt Street, Alexaddria, VA 22314, 1989, 703-549-9110 or FAX: 703-549-3891.

Periodicals, papers, and presentations

"Student Voice: Motivating Students Through Empowerm*ent," Bulletin,* OSSCC, University of Oregon, 1787 Agate St., Eugene, OR 97403. As cited in *Region 10 Center Signal,* February 1992, Vol. XIII, No. I, 400 East Spring Valley Road, Richardson, TX 75083-1300, 214-231-6301. Explains how to give students a voice in the educational process and encourage them to take a more active role in their learning.

Employability Skills

Periodicals, papers, and presentations

Benanzer, Elizabeth, "A Rising Sun Shines on American Training," *Vocational Education Journal*, Vol. 66, No. 5, May 1991, pp. 28-29.

Breeden, Kenneth H., "Teaching Work Ethics in Georgia," *Vocational Education Journal*, Vol. 67, No. 4, April 1992, pp. 43-44.

Carey, Art, "The United States of Incompetence, where things fall apart. "*The Dallas Morning News*, December 1, 1991, p. 4J.

Carnevale, A. P., L. J. Gainer, and A. S. Meltzer, "Workplace Basics: The Skills Employers Want," Alexandria, VA, American Society for Training and Development, Washington, D.C.: Employment and Training Administration, U.S. Department of Labor, 1988. (ERIC Document Reproduction Service No. ED 299 462.)

Imel, Susan, "Employers' Expectations of Vocational Education," *ERIC* Digest No. 90, Office of Educational Research and Improvement, U.S. Department of Education, 1989. (ERIC EDO-CE-89-90.)

Lankard, Bettina. "Employability--The Fifth Basic Skill," *ERIC* Digest No. 104, Office of Educational Research and Improvement, U.S. Department of Education, 1990. (ERIC No. EDO-CE-90-104.)

Meade, Jeff. "Keeping the Customer Satisfied," *ASEE PRISM*, December 1991, pp. 22, 24-25.

The Secretary's Commission on Achieving Necessary Skills, "What Work Requires of Schools: A *SCANS* Report for America 2000," U.S. Department of Labor, Washington, D.C., June 1991.

Warnat, Winifred I., "World-Class Work Force," *Vocational Education Journal*, Vol. 66, No. 5, May 1991, pp. 22-25.

Instructional materials

Developing Positive Worker Behaviors in Vocational and Technical Students, Center on Education and Training for Employment, Publications Office (CETE), Box C, The Ohio State University, 1900 Kenny Road, Columbus, OH 43210-1090, 1-800-848-4815 or 614-292-4353. Describes methods for identifying and teaching the general and job-specific attitudes and behaviors that are important to employees. Appendices provide an extensive listing of print and audiovisual resources administrators can use to help their teachers meet the challenge of developing positive work behaviors in their students.

Economic and Societal Factors, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Units cover job acquisition; on-the-job relations; communications; understanding the paycheck; personal money management; completing government-regulated work tasks; laws affecting you as a worker; changing jobs; and free enterprise.

Employability Skills for Cooperative Education Programs, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Contains eight units on job application and interview; safety; employer-employee relations; getting alone with co-workers; salaries: where do they go?; changing jobs and resignations; labor unions; and free enterprise.

English For The World of Work, Second Edition 1992, Media Materials Publishing, Department 920301, 1821 Portal St., Baltimore, MD 21224, 1-800-638-2758. Presents a dual approach to learning the English language and proper employment skills.

I Am Already Successful: Getting Motivated, Being Me, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Increase your student's self-esteem, confidence and motivation. This workbook will help to build concrete verbal and written communication skills, planning, organizing, cooperation, and goal setting.

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Education for Employment, The Conover Company, Ltd. 1991 Catalog, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. The Conover Company, Ltd. is dedicated to providing quality, multimedia employability skills and workplace literacy programs for special needs, at-risk and disadvantaged youth and adults. These programs will help provide a flexible workforce able to meet tomorrow's labor needs with minimal retraining. They are narrowing the gap between education and the needs of the workplace.

Successful Job Interviewing, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Helps students improve their interviewing skills and better understand the interviewing process. Apple and IBM.

Software catalogs

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Videos

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Video catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744.

Higher Level Thinking Skills

Books

Caine, Renate Nummela and Geoffrey Caine, *Making Connections*, Association for Supervision and Curriculum Development (ASCD), 1250 N. Pitt Street, Alexandria, VA 22314, 1991, 703-549-9110.

Costa, Arthur, Ed., *Developing Minds--Volumes 1 and 2*, Association for Supervision and Curriculum Development (ASCD), 1250 N. Pitt Street, Alexandria, VA 22314, 1991, 703-549-9110. Stock #611-91028NB.

Instructional materials

"The 6 W's, H & I," *Innovations*, Vol. 2, Karl Davidson Seminars, P.O. Box 5027, Huntsville, TX 77342-5027, 1-800-289-LIKE. Using the 6 W's, How & If to effectively stimulate thinking and problem-solving skills.

"Association," *Innovations*, Vol. 3, Karl Davidson Seminars, P.O. Box 5027, Huntsville, TX 77342-5027, 1-800-289-LIKE. Explains word association and its usage in a simple, easy-to-learn manner.

Consume This Book Series, Media Materials Publishing, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Workbook teach students about the adult world while reinforcing comprehension, discussion, thinking, reading and writing skills.

"The Hook," *Innovations*, Vol. 6, Karl Davidson Seminars, P.O. Box 5027, Huntsville, TX 77342-5027, 1-800-289-LIKE. Explains and reinforces the value of starting a lesson with a "hook" or attention getter.

"Problem Solving," *Innovations*, Vol. 8, Karl Davidson Seminars, P.O. Box 5027, Huntsville, TX 77342-5027, 1-800-289-LIKE. Teaches the seven-step process to a specific plan of action and encourages feelings of self-control and accomplishment.

Costa, Art, *The School as a Home for the Mind*, Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940.

Costa, Arthur, Ed., *Developing Minds*--Volumes 1 and 2, 1991, ASCD, 1250 N. Pitt Street, Alexandria, VA 22314, 703-549-9110 or FAX 703-549-3891. The two-volume set provides a mixture of practical advice and challenging theories you need to plan a thinking skills curriculum or assess the effectiveness of your current program. Volume 1 contains articles from leaders in the thinking skills movement who answer the fundamental questions behind every thinking skill program. Use Volume 1, *Resources for Teaching Thinking*, to get the big picture on the theory and research behind the thinking skills movement. Volume 2, *Programs for Teaching Thinking*, provides the newest resources needed to train teachers, plan lessons, and persuade parents and others of the need to teach thinking skills.

McCart, William F., *The Elements of Clear Thinking: Sound Reasoning, Accurate Communication, Critical Reading*, Educators Publishing Service, Inc., 75 Moulton Street, Cambridge, Massachustts, 1-800-225-5750. Three workbooks were designed to improve students' thinking skills and were written for high school and college students. Excellent in their field.

Nosich, Gerald, *Learning the Material: Teaching Students to Think in Subject-Matter Courses*, Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940.

Nosich, Gerald, *Teaching Critical Thinking Across the Curriculum: An Approach Through Specific Courses*, Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940.

Paul, Richard, *Critical Thinking: The Thinking That Masters the Content*, Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940.

Paul, Richard, *How to Help Students Develop Intellectual Standards (that they apply to everyday life)*, Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940.

Paul, Richard, *Critical Thinking Handbooks*, Center for Critical Thinking and Moral Critique, Sonoma State University, Rohnert Park, CA 94928, 707-664-2940. How to remodel lessons and redesign instruction in language arts, social studies, and science using critical thinking as a powerful tool of teaching and learning.

Paul, Richard, *Remodelling the Curriculum*, Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940.

Perkins, David, *Knowledge as Design in the Classroom*, Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940.

Ruggiero, Vincent, *The Attitude Factor: A Serious Obstacle to Thinking Instruction*, Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940. Descriptions are given concerning a number of practical approaches teachers can use to develop positive attitudes in students.

Swartz, Robert, *Assessing the Quality of Student Thinking: Techniques for Classroom Teachers*, Center for Critical Thinking and Moral Critique, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928, 707-664-2940.

Software

Basic Reading Skills, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. A remedial and developmental reading program wherein students learn content and comprehension and use critical thinking skills with written text and software.

HOTS (Higher Order Thinking Skills): Using Computers to Develop Thinking Skills in Students at Risk, Dr. Stanley Pogrow, University of Arizona, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. General thinking skills curriculum that teaches students how to learn information and concepts the first time they are taught. Techniques rely heavily on the power of computers to motivate student interest and on the ability of talented teachers to stimulate critical thinking in problem-solving environments.

Instant Survey, MECC, 6160 Summit Drive North, Minneapolis, MN 55430-4003, 1-800-685-MECC. This program mirrors the real world of survey research by taking advantage of students' natural curiosity and encouraging them to ask and answer questions. Working individually or in cooperative learning groups, students develop thinking skills as they learn the survey process. Planning sheets help students define the survey's purpose, predict results, investigate other sources, report results, and evaluate the decisions made. A cross-curriculum product that can be used by teachers in all disciplines. Winner of *Media & Methods* award. Grade 7-adult.

Zoyon Patrol, MECC, 6160 Summit Drive North, Minneapolis, MN 55430-4003, 1-800-685-MECC. In this simulation, students use their analytical skills to help them track, locate, and capture an elusive group of endangered species and return them to their natural habitats. A variety of computerized resources and tools such as a database "field guide", maps, science glossary, and weather reports are used to gather and analyze information and draw and test conclusions. Winner of *Media & Methods* award. Grades 7-12.

Software Catalogs

Critical Thinking Press & Software Catalog, 1991, Midwest Publications, Critical Thinking Press & Software, P.O. Box 448, Pacific Grove, CA 93950, 1-800-458-4849.

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Video

Applied Communication, 1986, Agency for Instructional Technology (AIT), 1111 West 17th Street, Box A, Bloomington, IN 47402, 1-800-457-4509. A comprehensive set of learning materials designed to help all students develop and refine career-related communication skills. While designed primarily for high school students, it may be useful in postsecondary, adult education, and retraining settings. Includes student instructional materials, AV instructional resources, full-year course consisting of teacher and student print, video and information/facilitation materials.

How To Say No, Meridian Education Corporation, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. This video encourages students to break free of peer pressure, good or bad, in order to become their own person. The program includes critical thinking skills and refusal tactics, with role play examples.

Managing Your Personal Finances, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Survival in a credit economy means knowing how to handle personal income and expenses, how to develop credit worthiness and avoid financial pitfalls by practicing sound financial management. Video was designed to teach students the basic fundamentals of handling personal finances.

Video catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Integrated academics

Books

Principles of Technology, Agency for Instructional Technology (AIT) and Center for Occupational Research and Development (CORD), Bloomington, Indiana, 1987.

Periodicals, papers, and presentations

"Final Design Report: Applied Communication," Agency for Instructional Technology (AIT), Bloomington, Idaho, March 1987.

Meyer, Robert H., "Beyond Academic Reform: The Contribution of Applied Academics to Mathematical Skills," unpublished paper, Institute for Research on Poverty, Madison, Wisconsin, 1989.

Willis, Scott, "Vocational Education: Applied Academics, Tech-Prep Programs Serve the 'Forgotten Half'," *ASCD Curriculum Update*, Vol. 33, No. 9, September 1991, pp. 1-8.

Instructional materials

Applied Biology/Chemistry, 1991, Center for Occupational Research and Development (CORD), 601-C Lake Air Drive, Waco, TX 76710, 1-800-231-3015. High school course that uses an applications-oriented, hands-on approach to teach biology and chemistry. ABC employs student activities that relate to work and other common experiences, and uses video as an effective motivational and information medium. Targets mid 50% of vocational students and science-certified teachers if taught for science credit; home economics, agriculture, health, and technology teachers if infused or taught for vocational credit.

Applied Mathematics, Student Resource Book, 1990. Center for Occupational Research and Development (CORD), 601-C Lake Air Drive, Waco, TX 76710, 1-800-231-3015.

Instructional Design for Applied Mathematics, February 1987, Center for Occupational Research and Development (CORD), 601-C Lake Air Drive, Waco, TX 76710, 1-800-231-3015.

Software

AMP—Applied Mathematics Program, 2nd Edition, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. These programs are based on the *VAM* materials developed by a consortium of math and vocational educators in Georgia and Colorado. *AMP* is useful with both academic and vocational instructors and provides an effective tool for integrating

Software

AMP—Applied Mathematics Program, 2nd Edition, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. These programs are based on the *VAM* materials developed by a consortium of math and vocational educators in Georgia and Colorado. *AMP* is useful with both academic and vocational instructors and provides an effective tool for integrating basic academic skills into specific occupational training programs. *AMP* requires an Apple II or IBM compatible computer with two 5.25" or 3.5" disk drives and a printer.

Principles of Technology Software Series by Shopware Educational Systems, 1989-90, Piney Mountain Press, Inc., The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. An Applied Physics Course designed by CORD and AIT. The following programs are designed to assist the Principles of Technology students in need of the following: making up work as a result of absenteeism; conceptual understanding of formulas; computer keyboarding experience; and immediate evaluation of performance. Each unit contains 4 copyable disks, written handout quizzes, teacher helps, and vinyl binder. 14 Units.

Life Skills

Periodicals, papers, and presentations

Meade, Jeff. "Keeping the Customer Satisfied," *ASEE PRISM*, December 1991, pp. 22, 24-25.

O'Connell, Rosanne M. "Adaptable Skills: A Global Economy," *Punchline*: a newsletter for business educators from The H.M. Rowe Company, Fall 1990.

Instructional materials

Career and Life Skills Series, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Workbooks that are not just meant to be read but used. They provide specific and pertinent career and life planning techniques through the use of interesting narrative, a variety of checklists, and other interactive exercises; and, teach practical and effective strategies that can be used throughout your working life.

Economic and Societal Factors, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Units cover job acquisition; on-the-job relations; communications; understanding the paycheck; personal money management; completing government-regulated work tasks; laws affecting you as a worker; changing jobs; and free enterprise.

English For The World of Work, Second Edition 1992, Media Materials Publishing, Department 920301, 1821 Portal St., Baltimore, MD 21224, 1-800-638-2758. Presents a dual approach to learning the English language and proper employment skills. Interest level 6-12, Adult.

Johnson, D. W., *Human Relations and Your Career: A Guide to Interpersonal Skills*, 2nd ed., Englewood Cliffs, New Jersey, 1987, Prentice Hall, Inc., The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Experiential learning procedures are used to help students learn practical interpersonal skills.

Life Skills English, Media Materials Publishing, Inc., Department 920301, 18221 Portal St., Baltimore, MD 21224, 1-800-638-1010. Special needs students learn basic skills such as using the dictionary and other reference books; making use of the library; answering a help-wanted ad, completing a job application; and shopping by catalog. Interest level 6-12, adult.

Real Life Activities, workbook, Media Materials Publishing, Department 920301, 1821 Portal St., Baltimore, MD 21224, 1-800-638-2758. Students learn to apply a variety of basic knowledge to the world around them. Includes order forms, coupons, and maps and relates to math, social studies, geography, and social sciences. Interest level: 6-12, Adult.

Software

Life Skills Software Series by Education Associates, Inc., 1989, Piney Mountain Press, The Education conneXtion, 12957 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Teaches the student how to deal with checking and saving to buy a car. Students will learn how to write a check and apply for credit, the costs and considerations in renting an apartment, and techniques in buying a car. Apple and IBM available.

Living With Your Paycheck: Developing a Budget, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Teaches the importance of understanding paycheck deductions, how to calculate gross pay, and how to arrive at the net amount. Apple and IBM.

Software catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1- 800-356-EDTC, FAX: 903-886-5744.

Vocational Education Software & Videos Catalog, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Features Life Skills Software Series by Education Associates which deals with banking, purchasing a car and renting an apartment.

Videos

The Apartment Rental Game, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. An entertaining, full-motion video is a complete guide to finding comfortable, affordable apartment housing that meets your needs. Topics include lease agreements, security deposits, house rules and waivers, renting terminology and what to ask about an apartment before renting.

Clothing Dollars and Sense, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Program helps develop the skills needed to make wise decisions when purchasing clothing.

How to Buy a Used Car, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Helps teenagers or anyone avoid costly mistakes when buying a used car. Includes tips on budgeting ongoing expenses for insurance, license, taxes and operation.

How To Say No, Meridian Education Corporation, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. This video encourages students to break free of peer pressure, good or bad, in order to become their own person. The program includes critical thinking skills and refusal tactics, with role play examples.

Make the Right Move! (The Apartment Rental Game), 1988, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Complete guide to finding comfortable, affordable apartment housing that meets the needs without going over in cost or falling into other traps. Topics include lease agreements, security deposit, house rules and waivers, renting terminology, and what to ask about an apartment before renting it. One videocassette with manual incorporating reproducible checklists.

Managing Your Personal Finances, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Survival in a credit economy means knowing how to handle personal income and expenses, develop credit worthiness, and avoid financial pitfalls by practicing sound financial management. Video was designed to teach students the basic fundamentals of handling personal finances.

Money Management Skills, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Help your students develop good money management skills such as figuring gross pay, making a budget, and using a checking account. Full motion 15 minute video.

Personal Goals: Your Path to Success, 1990, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Presents several methods for planning and achieving goals. By examining important personal qualities necessary to achieve success, the student is asked to reflect on past accomplishments and failure and assess the present for interests and abilities, as well as plan for the future by determining what preparation is necessary and what benefits will be derived from achieving personal goals. One 30-minute videocassette and workbook.

The Road to Wise Money Management, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Balancing checkbooks, understanding bank statements, getting credit are all complex and intimidating but necessary skills. Includes taxes and handling an ATM. Includes one 30 minute video and student guide.

Social Skills at Work, Educational Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Explains what social skills are and why they are important. Designed to inform and prompt discussion about working cooperatively, listening to criticism, and knowing when to speak up or be quiet.

Surviving the Checkout: Wise Food Buying, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. Shows how to make wise food buying decisions by pre-planning meals for the week.

Thank You For Calling!: Effective Telephone Techniques, 1991, Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744. Provides students with basic skills needed to handle all types of business telephone communications. One 30-minute videocassette and student workbook.

Values, Decisions, Success: Job Ethics, Educational Clearinghouse, Inc., P.O. Box 3951, Tallahassee, FL 32315, 1-800-231-1638. 14 minute video examines values needed for success in getting and keeping a job.

Video catalogs

Discovering a Changing World, 1991, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. Excellent source of videos and software.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744.

Tech Prep

Periodicals, papers, and presentations

Coorough, Calleen, "Tech Prep Team building: The Key to Success is getting Academic and Vocational Faculties to Cooperate," *Vocational Education Journal*, Vol. 67, No. 4, April 1992.

Technology in the Classroom

Books

Maley, D., *The Integration of Mathematics and Science into Technology Education: A Holistic Approach to Education*, The University of Texas at Austin, Extension Instruction and Materials Center, Austin, Texas.

Owens, T. & McClure, L., *New Developments in Improving the Integration of Academic and Vocational Education*, Northwest Regional Educational Laboratory, Portland, Oregon. 1989.

Warger, Cynthia, Ed., *Technology in Today's Schools*, ASCD Order Processing Dept., 1250 N. Pitt St., Alexandria, VA 22314, 703-549-9110, cited *ASCD Update*, August 1990, p. 8.

Periodicals, papers, and presentations

"Apple Adds Urban Sites to Technology Consortium," *Texas Lone Star*, Vol. 9, No. 8, October 1991, p. 29.

Bell, Terrel H. and Donna L. Elmquist, "Technical Interaction in the Classroom," *Vocational Education Journal*, Vol. 67, No. 3, March 1992, pp. 22-24

"CTRC Sets Plans: New ASCD Department Offers Curriculum and Technology Services," *ASCD Update*, Vol. 33, No. 2, February 1991, pp. 1, 4.

Carlton, John, "Power to the People...Who have the Power of Technology," *Texas Lone Star*, Vol. 9, No. 2, March 1991, pp. 44-45.

Carlton, John, "Technology in the Classroom Includes the Teachers, Too," *Texas Lone Star*, Vol. 9, No. 3, April/May 1991, pp. 47-48.

Collins, Allan, "The Role of Computer Technology in Restructuring Schools," *Phi Delta Kappan*, Vol. 73, No. 1, September 1991, pp. 28-36.

DeZonia, Robert H., "Interactive Video: Learning with a Difference," *Vocational Education Journal*, Vol. 65, No. 5, September 1990, pp. 36-37.

Edling, Walter and Alan Sosbe, "Transformations," *Commentary*, Winter 1991, pp. 15-19.

Edling, Walter, "*TRANSFORMATIONS*: Technical Literacy Training; Retraining for Technology; Tech Prep Bridge Program." Presentation at American Vocational Association, Los Angeles, California, December 1991.

Grenn, Tommye Lou, "How I Use Computers in ......A JTPA Medical/Clerical Program, et.al." *Vocational Education Journal*, Vol. 67, No. 3, March 1992, pp. 25-29.

"Grassroots: VSOs; Technology Student Association," *Vocational Education Journal*, Vol. 67, No. 3, March 1991, p. 50.

Jaeggli, Nathaniel D., "Multimedia Systems", *Vocational Education Journal*, Vol. 67, No. 3, March 1992, pp. 30-31, 52.

Kline, Lloyd W., "Technology Education Moves Center Stage For All Students, for All Their Lives," *ASCD Curriculum Update*, March 1987, pp. 1-8.

"Occidental Chemical Corporation Awards Two-Year Grant to TLTG," *Texas Lone Star*, Vol. 9, No. 8, October 1991, p. 30.

"Plugging Into More Flexible Learning," *Vocational Education Journal*, Vol. 66, No. 5, May 1991, p. 43.

"Resources: Where to Find Information on Interactive Video," *Vocational Education Journal*, Vol. 65, No. 5, October 1990, p. 38.

Skelly, Mary E., "More Media in the Classroom," *School and College*, December 1988, pp. 18-22.

T.H.E. Journal, Vol. 19, No. 7, February 1992.

"Technology Services Releases Fourth Publication," *Texas Lone Star*, Vol. 9 No. 3, April/May 1991, p. 49.

Welty, Kenneth. "Making It Relevant," *Vocational Education Journal*, Vol. 67, No. 1, November/December 1990, pp. 30-31.

White, Roger, "Following the Vision," *Texas Lone Star*, March 1991, pp. 20-21.

Vocational Education Journal, Vol. 67, No. 3, March 1992.

Instructional materials

1991-92 Service Training Materials Catalog, Ford Service Publications, P.O. Box 07150, Detroit, MI 48207, 1-800-782-4356. Multicolored transparencies for use with overhead projectors. An ideal training medium for large or small groups.

Adams, Dennis M. & Mary Fuchs, *Educational Computing: Issues, Trends and a Practical Guide*, Charles C. Thomas, 2600 South First Street, Springfield, IL 62794-9265, 1-800-258-8980, ISBN 0-398-05213-1, 1986.

Adams, Dennis M. & Mary Hamm, *Electronic Learning: Issues and Teaching Ideas for Educational Computing, Television, and Visual Literacy*, Charles C. Thomas, Publisher, 2600 South First Street, Springfield, IL 62794-9265, 1-800-258-8980, ISBN 0-398-05346-4, 1987.

Applied General Education Through Technology Education, Guide, 1991, Extension Instruction Materials Center, University of Texas at Austin, P.O. Box 7218, Austin, TX 78713-7218, 512-471-7716, 1-800-252-3461. Comprehensive curriculum guide introduces teachers to an interdisciplinary approach for technology, education, language arts, math, science and social studies. Modules contain individualized lesson plans for each discipline with activities designed to provide an applied problem-solving learning experience for all students, centered around a common theme. The disciplinary concepts are tied together by an overlapping timetable to provide easy application and transfer of learning for students and optimum teachability for teachers.

Help America's children excel in math and science. An offer for schools to receive valuable math and science equipment free, such as lab kits, microscopes and computers. Covers grades K-12. Requires saving proofs of purchase from products of DowBrands, The Dow Chemical Company, and Scovill Fasteners Inc. Contact: Educate America, P.O. Box 4853, Monticello, MN 55565-4853.

"IBM Program for Innovation grants," *IBM Education News Release*; also "IBM Program for Improving K-12 Education Through Innovative Uses of Information Technology," International Business Machines Corporation, Old Orchard Road, Armonk, New York 10504. Contact Rita A. Black, 914-765-6631.

Integration of Academic and Vocational-Technical Education: An Administrator's Guide. Competency-based Vocational Education Administrator Module Series, Ohio State University, available from American Association for Vocational Instructional Materials, 120 Driftmier Engineering Center, University of Georgia, Athens, GA 30602, 1987.

Rutherford, Andrea J., *Basic Communication Skills for Technology*, Prentice-Hall, 1991. Text provides practical applications of writing in vocational-technical fields. Presents clear explanations of key concepts in written communications, and covers the writing process in a systems approach that integrates reading, planning, writing, and revising. Highlights are eleven technical reading passages integrated with writing topics, vocabulary, spelling, word-usage, and other exercises.

Technology Planning Blueprint, A comprehensive guide that assists districts in developing a plan to implement technology. Styled as a workbook, the guide provides sample survey instruments and technology policies, technology team tips, and techniques for positive change. It is also a comprehensive technology resource guide that includes chapters on buying technology, implementing new technologies, and writing a district technology plan. A quarterly newsletter from Technology Services, "Dataline," provides readers with information about technology planning and funding, new hardware and software, and upcoming conferences and seminars. "Dataline" also carries short features on topics such as multimedia, CD-ROM, microcomputers, electronic mail, networking, computer viruses, and others. Call 1-800-580-8272.

Instructional materials catalogs

1991-92 Service Training Materials Catalog, Ford Service Publications, P.O. Box 07150, Detroit, MI 48207, 1-800-782-4356.

Educational Development and Training Center (EDTC), East Texas State University, Commerce, TX 75429, 1-800-356-EDTC, FAX: 903-886-5744.

Software

Across the Curriculum, 1991-92 Educational Software, Houghton Mifflin, 1 Wayside Road, Burlington, MA 01803-9842, 1-800-633-4514. Contains everything students need to learn, practice and use four basic computer skills. Book contains 100 lesson plans with reproducible masters for projects in math, language arts, science, and social studies.

Activ 15/15 Plan, Industrial Training Corporation, 13515 Dulles Technology Drive, Herndon, VA 22071-3416, 1-800-638-3757. Activ is an interactive videodisc training system which helps schools train local business employees and improve learning opportunities for students, as well as increase enrollment. Courseware library contains more than 100 titles, covering basic skills, maintenance and operations, health and safety, and quality control. Provides three interactive work stations plus multiple copies of lessons.

AES Series 1000 Technology Education System, Applied Education Systems Inc. Reviewed in *Vica Professional*, Vol. 26, No. 6, March 1992, p. 2. The system approaches technology as a broad-based discipline and integrates it with academic subjects. It takes the sociological, operational, and environmental implications of technology and combines them with educational disciplines. Some disciplines covered by the system are: communication technology, construction technology, energy technology, and manufacturing technology. It is designed for use in grades 6 through 12. For more information, contact George Garmus at 212-245-7026.

Comdex: The Source for Corporate Computing Solutions, The Interface Group, Conference and Exposition Producers, 300 First Avenue, Needham, MA 02194-2722.

The Computer: A Tool for the Teacher, by Edward B. Wright and Richard C. Forcier, Western Oregon State College, Wadsworth Publishing Company, 10 David Drive, Belmont, CA 94002-3098, 415-595-2350, and Brooks-Cole Publishing Company, 511 Forest Lodge Road. V Pacific Grove, 1985, CA 93950-5098, 408-373-0728. Intended for inservice or preservice elementary or secondary instructors who want to use the computer in education. This text prepares these students to use the new technology to its fullest advantage. Includes coverage of both Logo and BASIC programming languages; a section relating computer use to learning theory, a chapter on communications and its relation to courseware; material on integrating the computer into the curriculum; and extensive coverage of courseware evaluation, computer-assisted instruction, and computer-managed instruction. Apple II compatible software contains 14 interactive programs, many having to do with graphics.

Computer Learning Foundation Lesson Plans, Scholastic Inc., P.O. Box 7502, Jefferson City, MO 65102, 1-800-541-5513. These lesson plans are the winning entries in Computer Learning Month Teacher Lesson Plan Contests from the last three years and provide hundreds of ideas on ways to use the computer and technology in your classroom. Grades K-12.

HyperScreen 2.0, Classroom Publishing/Presentation, Scholastic Software, 2931 East McCarty Street, P.O. Box 7502, Jefferson City, MO 65102-9968, 1-800-541-5513. Combines text, graphics, speech, sound, special effects, and videodisc into interactive computer presentation. Teachers and students across the country have discovered a new way to present information. In New York, students created them to demonstrate their science fair projects. Teachers in Indiana used HyperScreen with a videodisc player to present lessons and to create tutorials for students who missed class or who needed additional review. And for students in Massachusetts, producing HyperScreen presentations provided a refreshing alternative to the traditional history paper. Features include Clip art, backgrounds, fonts, music and sound effects, as well as full-featured drawing and paint program. Special speech and scanner features are present for student with special needs. Systems requirements: Apple—128K; MS-DOS—256K with Color Graphics Card.

PC Magazine Guide to Using Netware by Les Freed & Frank J. Derfler, Jr., T.H.E. Journal, Vol. 19, No. 7, February 1992, p. 47. A book-and-disk combination for LAN administrators and users that supplies insights into network performance and productivity. Topics such as running NetWare with Microsoft Windows and connecting LAN-tastic to NetWare are covered. The diskette has utilities, batch files and menu scripts. (September 1991); Ziff Davis Press, 601-2000.

Principles of Technology Software Series by Shopware Educational Systems 1989-90, Piney Mountain Press, Inc., The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326. An Applied Physics Course designed by CORD. and AIT. The following programs are designed to assist the Principles of Technology students in need of the following: making up work as a result of absenteeism; conceptual understanding of formulas; computer keyboarding experience; and immediate evaluation of performance. Each unit contains four copyable disks, written handout quizzes, teacher helps and vinyl binder. 14 Units.

SchooLINC: Interactive Telecommunications Networks and the Future of Texas Schools, The Texas Network Education & Research Corporation, call or write Project Bluebonnet, c/o MCC, 3500 West Balcones Center Drive, Austin, TX 78759, 512-338-3266. SchooLINC is a comprehensive plan for developing the first fully-interactive instructional network linking public school campuses with advanced telecommunications facilities. The network prototype will use fiber optics and other technology applications in addressing such problems as educational equity, lack of resources and qualified teachers, and a serious drop out problem, as well as adult education and literacy issues.

TENET: Gateway to New Horizons, Texas Education Network; a telecommunications network available to all Texas educators for nominal fee. Explanation of service published by Texas Education Agency.

Software catalogs

Administrative Software, Surfside Software, Inc., Box 1112, East Orleans, MA 02643, 1-800-942-9008. Scheduling, report card, attendance, transcript, database, discipline, and other programs. Available for IBM, Mac and Apple II. Surfside Beacon homework hotline for IBM price upon request. As shown in *Education Week*, Special Advertising Section, January 8, 1992, p. 17.

AIT Catalog of Instructional Materials, Agency for Instructional Technology, Box A, Bloomington, IN 47402-0120, 1-800-457-4509. The Agency for Instructional Technology is a non-profit U.S.-Canadian organization established in 1962 to strengthen education. AIT provides leadership and service to the education community through cooperative development, acquisition, and distribution of technology-based instructional materials.

Educational Resources, free 164 page Color Catalog features Software for MAC, APL, IIGS, IGM & C64, School Versions & Lab Packs, Site License & Networking, CD-ROM & LaserDisks, Hardware & Accessories, 1-800-624-2926, As shown in *Education Week*, Special Advertising Section, January 8, 1992, p. 17.

Educational Software & Video, Tom Snyder Productions, 90 Sherman Street, Cambridge, MA 02140, 1-800-342-0236. Specializes in using technology to promote group learning. Complete line of K-12 software, video, and video disk products for all areas of the curriculum. Many programs for the one computer classroom. As shown in *Education Week*, Special Advertising Section, January 8, 1992, p. 17.

Software Designed by Teachers for Teachers, Award-winning, whole language, reading/writing software for K-adult... Reading Realities for middle to high school at-risk students and Reading Realities Elementary Series for grades 2-6. Free Catalog; Free 30-Day Preview—Free Demo Disks—lifetime warranty, 1-800-228-2871.

Software for Education, Spring 1992, Broderbund Software Direct, P.O. Box 6125, Novato, CA 94948-6125, 1-800-521-6263. Features award-winning products such as The New Print Shop, the Carmen Sandiego series, and PC Globe. Includes new network versions and site licenses. Also describes new programs in a variety of curriculum areas. As shown in *Education Week*, Special Advertising Section, January 8, 1992, p. 17.

Software Shop catalog contains over 1,000 titles picked from 100 publishers in the areas of language arts, science and math, plus special needs, 1-800-637-0047. As shown in *Education Week*, Special Advertising Section, January 8, 1992, p. 17.

Technical Lab Systems, Inc., P.O. Box 218609, Houston, TX 77218, 713-465-9793 or 1-800-445-1088. Catalog contains information concerning:
PN-2000 Computerized training lab for Pneumatics and Pneutronics;
AT-2000 Computerized Training Lab for Automotive Technologies and Autotronics;
EB-2000 Computerized Training Lab for Basic and Advanced Electronics; and
PT-2000 Computerized Training Lab for implementing Principles of Technology programs.

Ztek Company Interactive Videodiscs & CD-Rom for Education, Ztek Company, P.O. Box 1055, Louisville, KY 40201-1055, 1-800-247-1603. Interactive videodiscs and CD Rom; all accessories and software programs for IBM, Mac or Apple.

Video catalogs

1991-92 Service Training Materials Catalog, Ford Service Publications, P.O. Box 07150, Detroit, MI 48207, 1-800-782-4356. Produced in full color and are provided in ¾" Umatic or ½" VHS format. Full gamut of ASE certified programs on all sizes and types of car and truck repair. Intelligent Video Learning System (IVLS), programmed to guide the learned through instructional material, is also available.

AIT Catalog of Instructional Materials, Agency for Instructional Technology (AIT), Box A, Bloomington, IN 47402-0120, 1-800-457-4509. The Agency for Instructional Technology is a non-profit U.S.-Canadian organization established in 1962 to strengthen education. AIT provides leadership and service to the education community through cooperative development, acquisition, and distribution of technology-based instructional materials.

Vocational Education Software & Videos Catalog, Piney Mountain Press, The Education conneXtion, 12597 Montego Plaza, Dallas, TX 75230, 214-991-5252 or 5311 Valburn Circle, Austin, TX 78731, 512-346-2326.

Transfer Skills

Instructional materials

Transferable Skills: An Administrator's Guide, The Center on Education and Training for Employment, Publications Office, Box C, The Ohio State University, 1900 Kenny Road, Columbus, OH 43210-1090, 1-800-848-4815 or 614-292-4353. This guide presents examples of transferable skills and reviews instructional strategies that can be employed to teach them. Examples of broadly applicable skills are also presented.

Varied Instructional Methods

Books

Caine, Renate Nummela and Geoffrey Caine, *Making Connections: Teaching and The Human Brain,* ASCD Publication, Banta Company, 1991.

Joyce, B. and M. Weil, *Models of Teaching*, Prentice-Hall, Englewood Cliffs, New Jersey.

Mosston, Muska and Sara Ashworth, *The Spectrum of Teaching Styles*, Longman, Inc., White Plains, New York, 1990; Reviewed by Varnon, Dolores and Virginia Clifton in *Educational Leadership,* Vol. 48, No. 8, May 1991, p. 83.

Resnick, Lauren B. and Leopold E. Klopfer, Eds.., *Toward the Thinking Curriculum: Current Cognitive Research,* ASCD Yearbook, Alexandria, Virginia, 1989.

Wilen, William W., *Teaching and Learning Through Discussion: The Theory, Research, and Practice of the Discussion Method*, Charles C. Thomas, 2600 South First Street, Springfield, IL 62794-9265, 1-800-258-8980. Contributors from a wide variety of fields show how the discussion method can be realistically applied in classrooms.

Instructional materials

Adams, Dennis M. & Mary E. Hamm, *Media and Literacy: Learning in an Electronic Age—Issues, Ideas and Teaching Strategies*, Charles C. Thomas, 2600 South First Street, Springfield, IL 62794-9265, 1-800-258-8980, ISBN 0-398-05549-1, 1989.

Bedwell, Lance E., Gilbert H. Hunt, Timothy J. Touzel & Dennis G. Wiseman, *Effective Teaching: Preparation and Implementation (2nd Ed.),* Charles C. Thomas, Publisher, 2600 South First Street, Springfield, IL 62794-9265, 1-800-258-8980, ISBN 0-398-05717-6, 1991. The book is easy to use, requiring no special training, and lessons cover all major areas of the curriculum. Higher order thinking skills are used throughout the book for classifying, sequencing, drawing analogies, identifying similarities and differences, determining cause and effect, comparing and contrasting, drawing inferences, evaluating, and applying skills to the real world. Grades 4-7.

Clough, Dick B. & Bonnie M. Clough, *A Handbook of Effective Techniques for Teacher Aides*, Charles C. Thomas, 2600 South First Street, Springfield, IL 62794-9265, 1-800-258-8980, ISBN #0-398-03809-0, 1978.

Cut to the Chase: Critical Thinking and Reading Skills, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. These 72 true stories and skill-building exercises develop literal, critical, and inferential thinking skills: recognize and identify main ideas, similarities and differences; cite evidence; draw conclusions. Grades 10-12.

Effective Questions to Strengthen Thinking, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. Teacher handbook trains to ask questions about thinking and reinforce logical, critical and creative thinking. Divided into three grade levels: 1-3, 4-6, and 7-12.

Fact, Fantasy and Folklore, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. Stimulates critical thinking and develops language skills through role playing, creative activities and open-ended questions. Contains eleven well-known fairy tales, background "clues" for the teacher and lesson plans. Grades 3-12.

Fogarty, Robin and James Bellanca, *Patterns for Thinking, Patterns for Transfer*, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. Staff development program contains a spectrum of practical strategies to help teachers integrate curricula and assist with transfer. Synthesizes the best basic instructional practices of cooperative learning, graphic organizers, thinking skills, and metacognition. Patterns offer an integrated instructional methodology that focuses every classroom lesson on application and transfer within content, across disciplines, and into life. Grades K-12.

Fogarty, Robin and James Bellanca, *Teach Them Thinking: Mental Menus for 24 Thinking Skills*, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. Focuses on essential thinking skills to help students become effective in analyzing, evaluating, and synthesizing facts and information. Also offers a spectrum of thinking skills and cooperative group lessons that use prediction, inference, and classification to teach thinking. Grades K-12.

Frender, Gloria, *Learning to Learn*, Learning styles, note and test-taking advice, reading, study skills, practical hints, methods, tips, procedures, resources, and tools to help students succeed in school and life. Grades 4-12.

Gold-Vukson, Marji and Michael Gold-Vukson, A Great Ox...and Other Creative Thinking Pleasures, Box I & II, TX 78279, 512-438-4262. Quotations set the stage for the self-directed activities. Motivate creative thinkers and enhance creative thinking skills. Book I — Grade 4-6; Book II — Grades 7-12.

Gold-Vukson, Marji and Michael Gold-Vukson, *The Invisible Unicorn*, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. This book of photo-reproducible figural triggers is designed to help students expand their ability to think divergently in a non-verbal situation. All grades.

Goodman, Davis S. and Phyllis F. Goodman, *Teaching Reasoning Skills in Schools and Homes: A Gamebook of Methods*, Charles C. Thomas, 2600 South First Street, Springfield, IL 62794-9265, 1-800-258-8980, ISBN #0-398-05727-3, 1991.

Hammond, Dave, Tom Lester, and Joe Scales, *Plexers and More Plexers*, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. These word puzzles are pictorial codes for common phrases, idioms, or names. *More Plexers* is applicable to grades 9 and up.

Innovations, Vol. 3, "Association," Karl Davidson Seminars, P.O. Box 5027, Huntsville, TX 77342-5027, 1-800-289-LIKE. Explains word association and its usage in a simple, easy-to-learn manner.

Innovations, Vol. 7, "The Review," Karl Davidson Seminars, P.O. Box 5027, Huntsville, TX 77342-5027, 1-800-289-LIKE. Stresses that for each ten minutes of instruction, five minutes of review should be added to equal an increase in retention.

Innovations, Vol. 1, "The Thirty Second Message," Karl Davidson Seminars, P.O. Box 5027, Huntsville, TX 77342-5027, 1-800-289-LIKE. Provides simple instruction on the six steps to an effective 30-second message to maximize communication.

Laughing Matters, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. Encourages students to develop and channel their sense of humor for constructive purposes, as well as developing students' critical and creative thinking skills. Grades 4-12.

Lazear, David, *Seven Ways of Knowing: Teaching for Multiple Intelligences*, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. Surveys research on the theory of multiple intelligences and its relevance for today's teachers. Contains practical strategies for awakening the full spectrum of intelligences, techniques for developing and nurturing them, and tools to structure lessons that incorporate multiple intelligences. Grades K-12.

Mathematical Thinking Activities for Student Groups, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279-1437, 1-800-68-TEACH. Increases students' language and reasoning skills in three areas: clarifying word relationships, inferential thinking, and evaluative skill. Students put events in sequence, separate fact from opinion, and recognize logical relationships. 141 photocopy masters. Grades 6-10.

McKim, Robert, *Thinking Visually*, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. An exploration of the development and improvement of skills in visual perception and visual thinking, as well as ways to use these skills to solve problems. Grade 7 and up.

Scott, Kim, Inversions Posters, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. Two posters, each demonstrating an inversion. Gives students practice in visual thinking.

Seymour, Dale and Ed Beardslee, *Critical Thinking Activities in Patterns, Imagery, Logic*, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. Collection of activities useful in developing the ability to recognize patterns, use visual imagery, and reason logically. Includes strategy games, deductive logic, number sentences, attribute classification and Ven diagrams. Answer key and blackline masters. Grades K-3, 4-6; 7-12.

Standley, Kenneth E., *How to Study*, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. Improves study skills and develops attitudes that lead to academic success using the five basic skills of managing time and setting priorities, listening and taking notes, studying textbooks, preparing for tests, and taking tests. Grades 7 and up.

Skill Building with the Newspaper, Baltimore, 1991, Media Materials Publishing, Department 920301, 1821 Portal St., Baltimore, MD 21224, 1-800-638-1010.

Tactics to Tackle Thinking: Creative Activities for the English Classroom, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. These teaching units show creative methods to include higher-order thinking skills in the secondary English curriculum. Topics include composition, literature, research skills, vocabulary development, and independent projects. More than fifty challenging lessons will motivate students to think and learn. Grades 7-12.

Teaching for Thinking, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. Pertains to creative thinking, creative problem solving, scientific method, and the elements in creative teaching that bring all of that together in integrated classroom presentation. Encompasses creative thinking/creative problem solving; creative teaching; classroom operations; reference in theory and classroom materials; "The Maligned Wolf, A Common Story that Results from Creative Thinking."

Think: The Magazine on Critical & Creative Thinking, Grades K-8, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262.

The Unconventional Invention Book, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. A collection of reproducible activities to stimulate inventive thinking . Grades 3-12.

Periodicals, papers, and presentations

Copilevitz, Todd, "Mind Games," The Dallas Morning News, December 4, 1991, Sec. C, pp. 1,4.

Resnick, Lauren B., "Education and Learning to Think," Washington, D.C., Committee on Mathematics, Science, and Technology Education National Research Council, 1987, ED 289-832.

Showers, B., "Research-Based Training and Teaching Strategies and Their Effects on the Workplace and Instruction," 1989. Paper delivered at the annual meeting of the American Educational Research Association, San Francisco.

Software

Kemnitz, Thomas Milton, Brain Booster: Reasoning by Visual Analogy, (Winner of the Twenty-First Century Mindware Award), ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262. Designed to increase reasoning by visual analogy. Presents 9 geometric shapes in a grid of 3 across and 3 down. The program has 4 speeds and presents 52 screens. Appeals pre-kindergarten to adult.

Videos

Follow My Directions, American Association for Vocational Instructional Materials (AAVIM), 745 Gaines School Road, Athens, GA 30605, 1-800-228-4689. Live action video to help the viewer learn the importance of listening to and following directions including in class, at home, and on the job.

Teacher Teaching Thinking VHS Videos, ECS Learning Systems, Inc., P.O. Box 791437, San Antonio, TX 78279, 512-438-4262.

Setting the Climate: Models a classroom climate of risk-taking and acceptance. (16 min.)

Structuring Interaction: Shows a primary reading lesson with cooperative thinking. (17 min.)

Explicit Thinking Skills: Demonstrates direct instruction of thinking skills in a 5th-grade math lesson. (18 min.)

Metacognitive Processing: Shows students thinking about thinking a social studies lesson. (16 min.)

Academic Education, Business and Industry, and Vocational Education Join Hands

to Integrate

Cunning Hand
Cultured Mind

Hail to the skillful, cunning hand!

Hail to the cultured mind contending
for the world's command!

Here let them be combined.

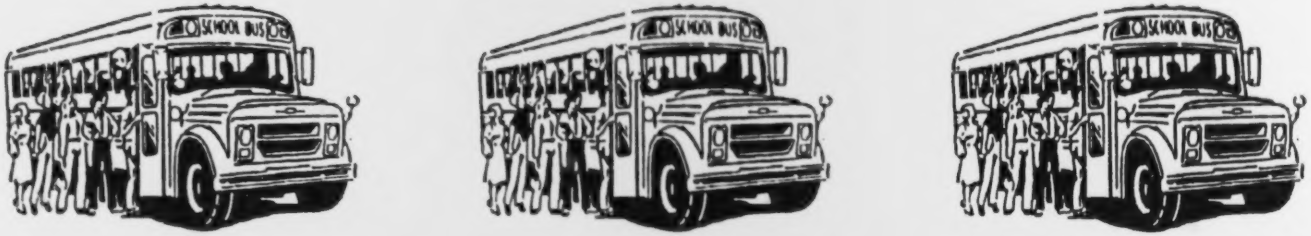
Calvin Woodward
1879

Today's schools are structured in almost the same way as were the schools of your parents and grandparents.

Major student problems in American high schools in the 1940's

- ✓ talking
- ✓ chewing gum
- ✓ making noises
- ✓ running in halls
- ✓ getting out of line
- ✓ wearing improper clothes
- ✓ not putting paper in trash

Every day in Texas,
nearly 225 students—three bus loads—
leave school and never come back.


SCHOOL BUS
SCHOOL BUS
SCHOOL BUS

Individuals who complete high school will earn a lifetime income approximately $400,000 higher than that of their peers who drop out.

Robert L. Martin, Vice President/Executive Director, Center for Workforce Preparation and Quality Education

Teachers see students suffering from:

Goallessness

More than half our 18-year-olds do not have the knowledge or skills to find or keep a good job.

William E. Brock, Chairman, Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor

In most American high schools,
the majority of administrative
and teaching time
is focused on college-bound students.
The result is that students have
little opportunity to participate
in vocational education.

Most teachers work harder
in the classroom
than their students.

As puzzle pieces are only fragments, so are subjects in our middle and high school—each subject is taught by a different teacher, in a different room, with different terminology, and each subject is seen as an entity of its own.

Elementary schools are not quite so bad, there is no changing of rooms, but the teacher says, "Now put away the math book and get out the science book."

We seldon show how all the "pieces" can be put together to reveal the "big picture"

American industry spends more money each year teaching remedial math to employees than all grade schools, high schools and colleges in the country combined spend on math education.

"We're already spending a $117 million a year on training at Chrysler. But it doesn't all go to train workers how to run computers or robots or stamping presses. A big part of it goes to teach our people the three R's they didn't learn in school. In some of our plants, we have about 25 percent of our people reading at grade six or below, many of them functionally illiterate."

Lee Iacocca, 1989 National Education Association Meeting

Texas Instruments spends approximately $2,000,000 per year teaching remedial reading to its employees.

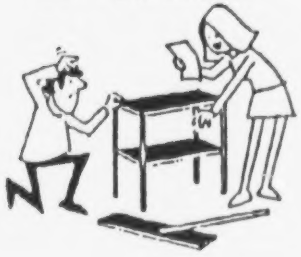
Worth Noting

"We are not responding to the needs of employers or the majority of America's young people who will not go on to college. Despite the fact that 82 million U.S. jobs don't require a college degree, our entire education system is geared to those students who will be attending traditional, four-year institutions—to the white-collar work-force. Somewhere along the way, we lost respect for the skills we now so desperately need in our factories and on the front lines of our service industries."

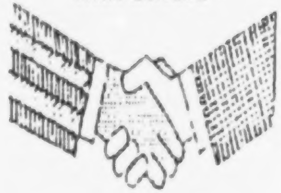
William Kolberg, President amd CEO, National Alliance of Business

Employers want workers to be capable of:

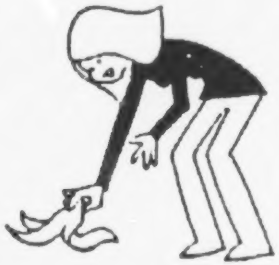
Solving problems



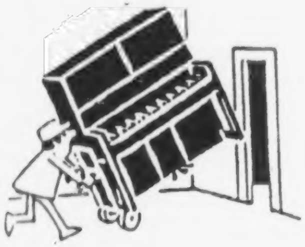
Getting along with others



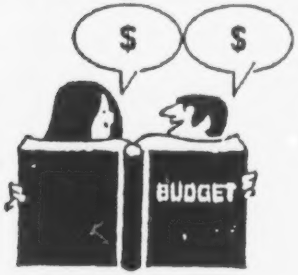
Being alert to safety



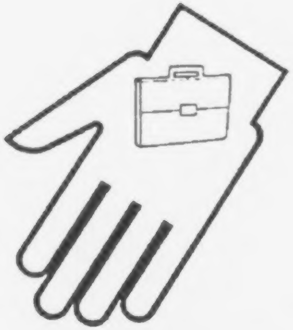
Anticipating a problem

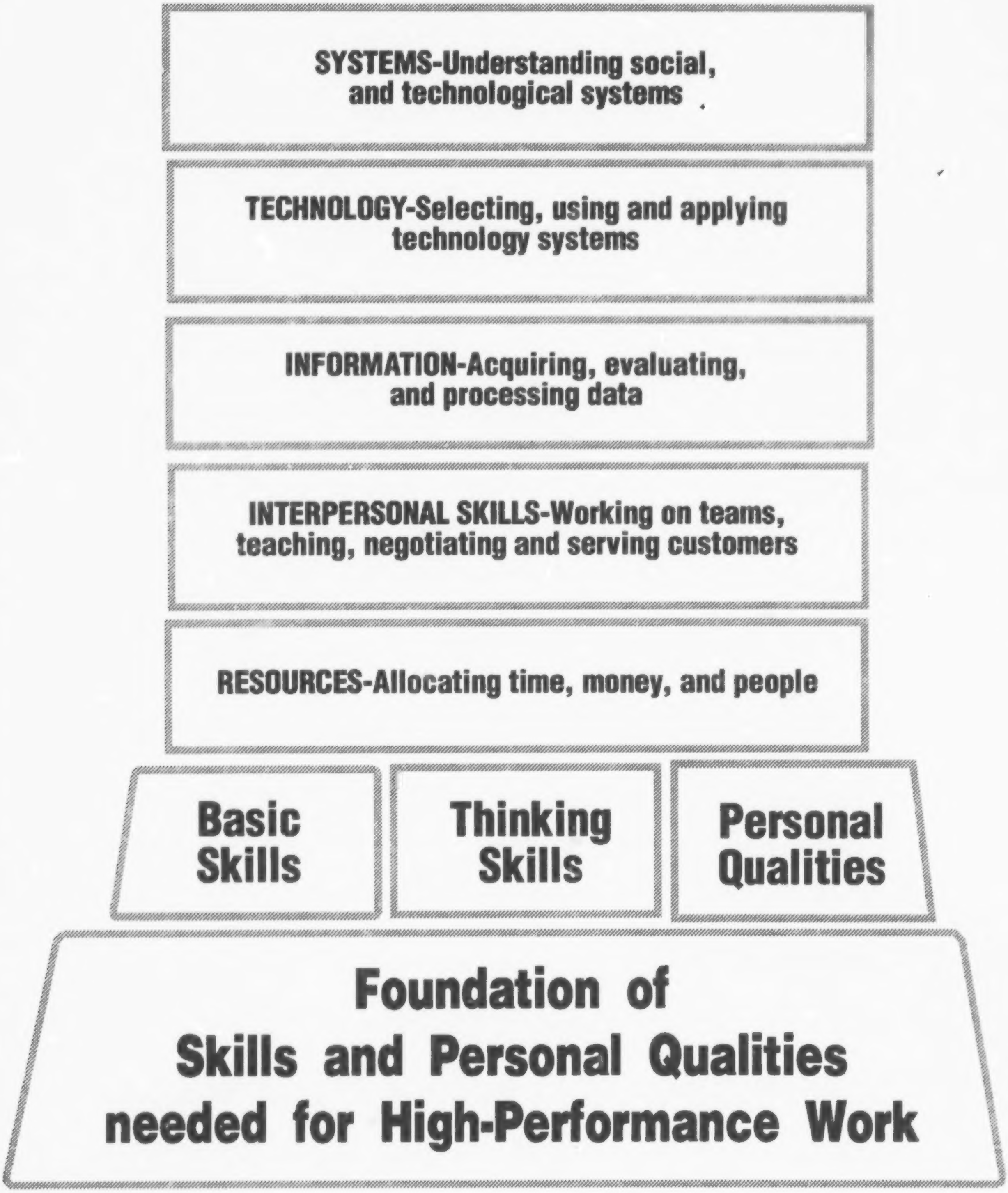


Managing money



TRANSFER SKILLS





SYSTEMS-Understanding social, and technological systems

TECHNOLOGY-Selecting, using and applying technology systems

INFORMATION-Acquiring, evaluating, and processing data

INTERPERSONAL SKILLS-Working on teams, teaching, negotiating and serving customers

RESOURCES-Allocating time, money, and people

Basic Skills

Thinking Skills

Personal Qualities

Foundation of Skills and Personal Qualities needed for High-Performance Work

Workplace Know-how: What Work Requires of Schools

The know-how identified by SCANS is the result of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance.

Competencies

Effective workers can productively use:

Resources

Interpersonal Skills

Information

Systems

Technology

Teaching, Assessing, and Learning in Context

Example: Develop a plan to show how a production schedule can be maintained while a staff is trained in new procedure. Esitmate the number of additional employees or overtime required. Prepare charts and . . .

The Foundation

Competence requires:

Basic Skills

Thinking Skills

Personal Qualities

Source: SCANS Report

Today's versus Tomorrow's Workplace

Traditional Model	High-Performance Model
Strategy	
Mass Production	Flexible Production
Long Production Runs	Customized
Centralized Control	Decentralized
Production	
Fixed Automation	Flexible Automation
End-of-line Quality Control	On-line Quality Control
Fragmentation of Tasks	Multiskilled Teams
Authority with Supervisor	Authority with Workers
Hiring/Human Resources	
Labor-Mgt. Confrontation	Cooperation
Minimal Qualifications	Basic Skills Screening
Workers as a cost	Workers as an Investment
Job Ladders	
Internal Labor Market	Limited Internal Market
Advancement by Seniority	Advancement by Certified Skills
Training	
Minimal for Production Workers	Training for Everyone
Specialized for Craft Workers	Broader Skills Sought

Source: SCANS Report

Characteristics of Today's and Tomorrow's Schools

Today's	Tomorrow's
Strategy	
Basic Skills Development	Focus on Thinking Skills
Testing Separate from Teaching	Integral Assessment
Learning Environment	
Recitation and Recall from Short-term Memory	Students Construct Knowledge
Work as Individuals	Cooperative Working
Hierachically Sequenced—Basics before Higher Order	Skills Learned in Real Problem Context
Management	
Supervision by Administration	Learner-Centered Teacher-Directed
Outcome	
Only Some Students Learn to Think	All Students Learn to Think

Source: SCANS Report

"We no longer need hundreds of people
to do things by hand.
We need people who can read
digital read-outs, take statistics and
numbers off machines, and
write them in charts for further analysis."

Susan Hooker, Motorola

The survival of many business
and industries, as well as the overall
health of our economy,
is greatly dependent on flexible workers
with strong basic skills
who can solve problems
in an increasingly technological world.

Only 15 percent of tomorrow's jobs
will require college diplomas,
but more than half will call
for some other sort of postsecondary
education and training.

The illiterate of the year 2000
will not be the individual
who cannot read and write,
but the one who cannot learn,
unlearn, and relearn.

Alvin Toffler

SERVICE & QUALITY

are key words for businesses in the 90’s

"It'll do"/"Nobody's perfect"

★ ★ ★ ★

"It'll do"/"Nobody's perfect"

★ ★ ★ ★

What America Would Get From "99.9% Suppliers"

(1 mistake in every 1000 tries)

- Unsafe drinking water almost 1 hour each month
- No electricity, water, or heat for 8.8 hours each year
- No telephone service or television transmission for approximately 10.2 minutes each week.
- 2 short or long landings a day at every major U.S. airport
- Approximately 500 incorrect surgical operations per week
- More than 20,000 wrong drug prescriptions each year
- Over 15,000 newborn babies accidently dropped by doctors/nurses each year
- 48,000 lost articles of mail per day

"Reaching for perfection through higher expectations"

Slogan for Motorola,
winner of Malcolm Baldridge Quality Award

"If things don't change,
10 years from now,
business and industry will be
running our schools."

statement made by business and industry leaders to a group of educators in Plano, Texas

Two differences between business and education:

1. Business stipulates its raw material/We take anything that walks in the door.
2. Business creates a product or performs a service/We work to allow a student to "unfold" to be what he/she wants to be.

"Restructuring a school is quite similar to

learning to drive on the left side of the road

after you've been driving on the right side

your whole life."

Source: "Detours on the Road to Site-Based Management" Laurence W. Aronstein, Marcia Marlow, and Brendan Desilets
Educational Leadership, 47 (Nov. 1987): 7-13

"If you don't restructure, public education in America is going to be finished in 5 to 10 years."

—Al Shanker

Source: "Restructuring: What Is It?" (Entire Issue). (April 1990). *Educational Leadership*, 47, 7: 10.

"There's still no consensus on what (restructuring) is, or what it ought to be."

—Michael Kirst

Source: "Restructuring: What Is It?" (April 1990). *Educational Leadership*, 47, 7: 10.

"We believe the system cannot change incrementally—it has to be shocked out of existence."

—Adam Urbanski

Source: "Restructuring: What Is It?" (April 1990). *Educational Leadership*, 47, 7: 5.

"We believe the system cannot change incrementally—it has to be shocked out of existence."

—Adam Urbanski

Source: "Restructuring: What Is It?" (April 1990). *Educational Leadership*, 47, 7: 5.

"Very few of these things
(restructuring strategies)
are in and of themselves new . . .
but they have not been
put together in a strategy
for changing the entire system.
That, to me, is what
restructuring is."

—Michael Tucker

Source: "Restructuring: What Is It?" (April 1990). *Educational Leadership*, 47, 7: 9.

"If we want restructuring to happen, staff members need time to think and some clues as to what is fair game to consider when contemplating change."

Source: "One District Learns About Restructuring" Charles E. Sambs and Randy Schenkat, *Educational Leadership*, 47 (Nov. 1987): 7-13

If we keep on doin'
what we're doin'—
We're gonna keep on gettin'
what we're gettin'—

Blessed are they who are flexible,
for they shall not be
bent out of shape.

**"POTENTIAL simply means,
he ain't done it yet!"**

—Bum Phillips

Tech Prep

Is	Is not . . . .
✓ An avenue to educational reform with emphasis on contextual learning that combines knowedge with doing	● The same approach to education but with a new name
✓ The integration of professional-technical education and academic curricula with an applied academic emphasis	● Professional-technical education only
✓ A cooperative secondary and post-secondary program emphasizing continuity in learning	● Secondary education only
✓ An avenue with multiple exit points leading to an associate degree and possibly more advanced curriculum	● A terminal education program
✓ A curiculum "choice" for students based upon learning styles and models	● A "tracking" approach to education
✓ Preparation for a career and continuing education	● Entry-level job preparation only
✓ A clear curricula structure with substance and focus	● General education
✓ Helping students use information	● Just dispensing information

From Global Edge, Collin County Tech Prep Consortium

What is integration?

Education is in the

"sit & git" stage

Carl Perkins Amendments of 1990

"Funds made available — shall be used to provide vocational education in programs that . . . integrate academic and vocational education . . . in such programs through coherent sequences of courses so that students achieve both academic and occupational competencies."

"The Perkins Act is an important step in redirecting vocational education and, ultimately, in restructuring our high schools for the 21st century."

Larry Rosenstock
PDK
Feb., 1991

Integrated teaching promotes a sense of wholeness which emerges from seeing how subjects relate to each other.

Students learn more, remember more, and are able to apply their knowledge when teaching and learning are interdisciplinary.

"One learns from books. . .
only that certain things can be done.
Actual learning requires
that you do those things."

—Frank Herbert

"I hear and I forget;
I see and I remember'
I do and I understand."

—Old Chinese Proverb

"The ancient Greeks knew that learning comes from playing. Their concept for education (paideia) is almost identical to their concept for play (paidia)."

—Roger Von Oech

All students do not learn

in the same way

"We connect the world of school to the world of work, and then we stress lifelong learning to keep the quality always improving."

—The Secret to Education

"Challenge yourself by occasionally trying something that doesn't come naturally. Everyone can stretch his mind, and it's worth a little effort to learn new thinking strategies."

Robert and Susan Bramson

"We used to be constructed by a paradigm that was 2x4x6x9x12

—2 text books

—4 walled classroom

—6 periods of the day

—9 months of the year

—12 years of elementary and secondary education

—Geoffrey Fletcher, Associate Commissioner of Educational Technology at TEA

Old paradigm of education:

Time is the constant;

Learning is the variable.

(You must learn by the end of the semester or you will fail.)

New paradigm of education: Learning is the constant; Time is the variable.

(Everyone can learn; and some learn faster than others.)

Current Paradigm:

WHEN students learn something
is more important than
WHETHER they learn it well.

OBE Paradigm:

WHETHER students learn something well
is more important than
WHEN they learn it.

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OBE's "Power" Principles

1. **CLARITY OF FOCUS** on Culminating Exit Outcome of Significance
2. **EXPANDED OPPORTUNITY** and Support of Learning Success
3. **HIGH EXPECTATIONS** for All to Succeed
4. **DESIGN DOWN** from Your Ultimate, Culminating Outcomes

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Examples of Outcome-Based Models

Craft Guilds of the Middle Ages
Apprenticeship Training in the Skilled Trades
Scouting Merit Badges
Mititary Training Programs
The One-Roomed Schoolhouse
Personnel Training in Business
Drivers Licenses
"Alternative" High Schools

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"Let each become all

that he is capable of being"

Thomas Carlyle

"Any fool can criticize, condemn and complain—and most do."

Dale Carnegie, *How to Win Friends and Influence People* (Pocket Books)

Failure is never final;
it is just a step in learning.

Learning by self-directed inquiry

is a perpetually self-empowering activity.

--Charles D. Hayes

Doctors have added 10 years
to the lifespan of mankind;
We're learning how to add
educational life to students.

Education is what you remember

AFTER the test!

WIIFM = What's in it for me?

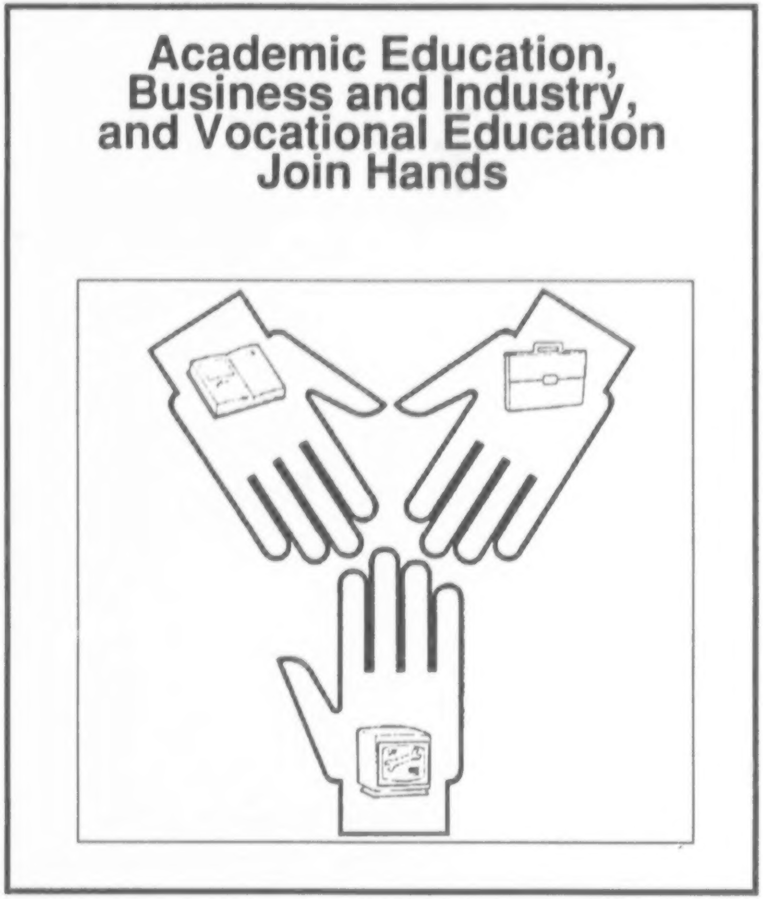
Benefits to Teachers of Vocational Subjects

1. Your students can acquire job specific skills because they have acquired the necessary academic skills.
2. You have fewer discipline problems.
3. Your students' TAAS scores will rise.
4. You rekindle the flame.

Benefits to Teachers of Academic Subjects

1. **You have "real world" examples.**
2. **You have activities both you and your students enjoy.**
3. **Your students' TAAS scores will rise.**
4. **You save money and trees.**
5. **You have fewer discipline problems**
6. **You rekindle the flame.**

Integration, it's a puzzle, but it's worth solving.



Academic Education,
Business and Industry,
and Vocational Education
Join Hands

Integration of academic and vocational education

—with input from business and industry—

can be a solution to the problems

in our education system.

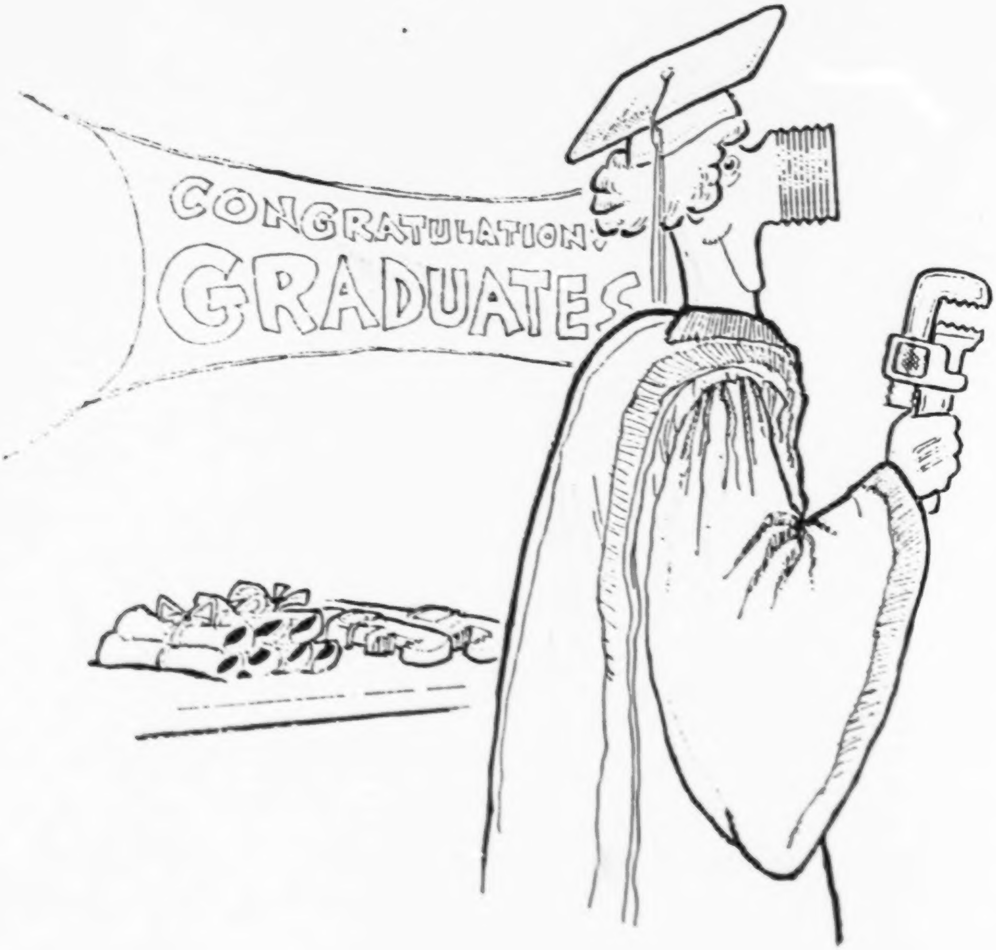
Integration is the Puzzle
Teamwork is the Solution

The purpose of Education . . .

Much that you learn today won't be true five years from now. Many things you haven't heard of today will be important five or ten years ahead. If I teach you something supposedly "relevant," I'm guaranteeing irrelevance. If I teach you how to work, to have good attitudes, to take responsibility for your own ideas, to communicate and to think a problem through, no matter what subject matter I use in order to get those basic skills of mind and intellect across, then I'm giving you something you can use for a very long time. Those skills will never change . . . the stakes are a lifetime.

Professor Jacob Neusner

We must respect both our Philosophers and our Plumbers if our theories and our pipes are going to hold water


CONGRATULATIONS
GRADUATES

COMPLIANCE STATEMENT

TITLE VI, CIVIL RIGHTS ACT OF 1964; THE MODIFIED COURT ORDER, CIVIL ACTION 5281, FEDERAL DISTRICT COURT, EASTERN DISTRICT OF TEXAS, TYLER DIVISION
Reviews of local education agencies pertaining to compliance with Title VI Civil Rights Act of 1964 and with specific requirements of the Modified Court Order, Civil Action No. 5281, Federal District Court, Eastern District of Texas, Tyler Division are conducted periodically by staff representatives of the Texas Education Agency. These reviews cover at least the following policies and practices:

(1) acceptance policies on student transfers from other school districts;

(2) operation of school bus routes or runs on a non-segregated basis;

(3) nondiscrimination in extracurricular activities and the use of school facilities;

(4) nondiscriminatory practices in the hiring, assigning, promoting, paying, demoting, reassigning, or dismissing of faculty and staff members who work with children;

(5) enrollment and assignment of students without discrimination on the basis of race, color, or national origin;

(6) nondiscriminatory practices relating to the use of a student's first language; and

(7) evidence of published procedures for hearing complaints and grievances.

In addition to conducting reviews, the Texas Education Agency staff representatives check complaints of discrimination made by a citizen or citizens residing in a school district where it is alleged discriminatory practices have occurred or are occurring.

Where a violation of Title VI of the Civil Rights act is found, the findings are reported to the Officer for Civil Rights, Department of Health, Education, and Welfare.

If there is a direct violation of the Court Order in Civil Action No. 5281 that cannot be cleared through negotiations, the sanctions required by the Court Order are applied.

TITLE VII, CIVIL RIGHTS ACT OF 1964; EXECUTIVE ORDERS 11246 AND 11375; TITLE IX, 1973 EDUCATION AMENDMENTS; REHABILITATION ACT OF 1973 AS AMENDED; 1974 AMENDMENTS TO THE WAGE-HOUR LAW EXPANDING THE AGE DISCRIMINATION IN EMPLOYMENT ACT OF 1967; AND VIETNAM ERA VETERANS READJUSTMENT ASSISTANCE ACT OF 1972 AS AMENDED IN 1974.
It is the policy of the Texas Education Agency to comply fully with the nondiscrimination provisions of all federal and state laws and regulations by assuring that no person shall be excluded from consideration for recruitment, selection, appointment, training, promotion, retention, or any other personnel action, or be denied any benefits or participation in any programs or activities which it operates on the grounds of race, religion, color, national origin, sex, handicap, age, or veteran status (except where age, sex, or handicap constitute a bona fide occupational qualification necessary to proper and efficient administration). The Texas Education Agency makes positive efforts to employ and advance in employment all protected groups.